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A CONTRIBUTION TOWARDS THE STUDY OF THE NATURAL HISTORY OF TUBAL GESTATION.

ILLUSTRATED BY A SERIES OF SEVENTY-FIVE ORIGINAL CASES.

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Introduction.

No subject in the whole range of obstetrics and gynæcology has advanced so rapidly in recognised importance as that of extra-uterine pregnancy. This advance dates from some twenty years ago, when the practice of abdominal section in these cases led to their increased recognition, and, indirectly, to advance in our knowledge of their pathology.

Up to the present time it may be said that the whole of the literature of the subject deals with it from two points only—namely, surgery and pathology. With the increase of surgical treatment another aspect of the subject shrank into obscurity. It was taken for granted that nearly all cases died without operation, and that therefore all cases of recovery after operation represented the same number of lives saved. More than this, it was absolutely stated that the mortality of these cases untreated was almost cent. per cent. For instance, Puech gives statistics of 100 pregnancies, with 98 ruptures (of which 97 died), and 2 deaths from causes other than rupture.

In short, the great desideratum in this subject is some trustworthy account of its natural history.

A curious fact strikes one, namely, that hæmatocele was a well-

recognised condition in years gone by, and that it caused very few deaths indeed; secondly, that it was asserted by enterprising surgeons that hæmatocele was, in the great majority of cases, due to ruptured tubal gestation, and that, untreated, its mortality was large. The chance of proving the correctness or incorrectness of this latter statement was rarely afforded, as cases recognised were practically always operated on. On the other hand, the old hæmatoceles of bygone years nearly always recovered if left alone.

I am quite aware that the diagnosis of the present day is very superior to that of years antecedent to the frequent practice of abdominal section, and that chances of verifying the correctness of the diagnosis were formerly much smaller than at present; still, having lived in both eras, I am sure that all hæmatoceles were not wrongly diagnosed in the past.

What about extra-uterine gestations in days before they were fully recognised?

It is plain that the discovery of a condition or the recognition of its frequent occurrence cannot create the condition; on the other hand, it is generally acknowledged that the frequency of the diagnosis of a condition will depend largely upon its recognition.

I can remember the practice in the gynæcological wards of St. Bartholomew's Hospital since 1875, a matter of twenty-seven years. Till 1877 these wards were under the care of Dr. Greenhalgh, from 1877 to 1891 under that of Dr. Matthews Duncan, and from 1891 under my own care.

Under Dr. Greenhalgh the diagnosis of hæmatocele was frequently made; under Dr. Matthews Duncan it was comparatively seldom made, and my recollection is that cases which would have been diagnosed by Dr. Greenhalgh as hæmatocele were often diagnosed by Dr. Matthews Duncan as perimetritis.

This impression receives some support from the statistical tables of the hospital, an extract from which is given below. It must be stated, however, that the diseases here quoted are tabulated from the diagnosis of various medical officers, not only from that of the obstetric physicians, but also from that of the physicians and surgeons in the general wards of the hospital. Still, the large majority of the cases occurred in the gynæcological wards.

It is probable that the majority of cases of pelvic abscess were really such, and were confirmed by the escape of pus; but it is quite likely that some of them may have been cases of extra-uterine

gestation which showed the sign of elasticity, and afterwards underwent absorption.

The rarity of the diagnosis of extra-uterine gestation until 1893 must be noticed, as well as the fact that perimetritis (pelvic peritonitis) is hardly diagnosed till 1878 (Dr. Duncan's appointment), nearly all cases diagnosed as inflammatory being previously entered as pelvic cellulitis (Dr. Greenhalgh's tenure of office).

The cases of pelvic hæmatocele had a certain, though small, mortality, and this in itself raises a suspicion that these fatal cases may have been due to extra-uterine gestation.

It will be seen that from 1865 to 1877 (twelve years inclusive) there were 129 cases in which hæmatocele was diagnosed, and of these 5 died, a mortality of nearly 3·87 per cent.

From 1878 to 1890 (twelve years inclusive) there were 51 cases in which hæmatocele was diagnosed, and of these 2 died, a mortality of nearly 4 per cent.—that is, much the same. This was during Dr. Matthews Duncan's tenure of office.

From 1891 to 1900 (nine years inclusive) there were 36 cases in which hæmatocele was diagnosed, and of these none died.

From 1865 to 1877 6 cases of extra-uterine fœtation are noted, with 1 death; from 1878 to 1890 10 cases are noted, with 2 deaths; from 1891 to 1900 63 cases are noted, with 9 deaths.

It must be noted that the total numbers in the gynæcological wards were increased in 1895 by the addition of fourteen beds.

From the 'St. Bartholomew's Hospital Reports.'

*1865.	Cases of pelvic hæmatocele			...	6;	deaths	...	0
1866.	„	„	„ ...	...	2	„	...	0
1867.	„	„	„ ...	...	6	„	...	0
„	„	„	cellulitis ...	...	16	„	...	0
			Total	...	30	Total	...	0
1868.	No statistics.							
1869.	Cases of pelvic hæmatocele			...	9;	deaths	...	1
„	„	„	cellulitis ...	...	7	„	...	0
„	„	„	abscess ...	...	7	„	...	3
			Total	...	23	Total	...	4
1870.	Cases of pelvic hæmatocele			...	11;	deaths	...	1
„	„	„	cellulitis ...	...	26	„	...	0
			Total	...	37	Total	...	1

* Greenhalgh, October 8, 1861.

1871.	Cases of pelvic hæmatocele			...	10	; deaths	...	0
,,	,,	,,	cellulitis ...	...	12	,,	...	1
,,	,,	,,	abscess ...	...	3	,,	...	0
			Total	...	25	Total	...	1
1872.	Cases of pelvic hæmatocele			...	13	; deaths	...	0
,,	,,	,,	cellulitis ...	...	10	,,	...	0
,,	,,	,,	abscess ...	...	3	,,	...	0
			Total	...	26	Total	...	0
1873.	Cases of pelvic hæmatocele			...	9	; deaths	...	1
,,	,,	,,	cellulitis ...	...	16	,,	...	0
,,	,,	,,	abscess ...	...	4	,,	...	0
,,	,,	extra-uterine fœtation		...	2	,,	...	0
			Total	...	31	Total	...	1
1874.	Cases of pelvic hæmatocele			...	10	; deaths	...	0
,,	,,	,,	cellulitis ...	...	16	,,	...	0
,,	,,	extra-uterine fœtation		...	2	,,	...	1
			Total	...	28	Total	...	1
1875.	Cases of pelvic hæmatocele			...	11	; deaths	...	0
,,	,,	,,	cellulitis ...	...	16	,,	...	1
,,	,,	,,	abscess ...	...	4	,,	...	2
,,	,,	,,	peritonitis ...	...	7	,,	...	1
			Total	...	38	Total	...	4
1876.	Cases of pelvic hæmatocele			...	20	; deaths	...	0
,,	,,	,,	cellulitis ...	...	16	,,	...	1
,,	,,	,,	abscess ...	...	1	,,	...	0
,,	,,	extra-uterine gestation		...	1	,,	...	0
			Total	...	38	Total	...	1
*1877.	Cases of pelvic hæmatocele			...	22	; deaths	...	2
,,	,,	,,	cellulitis ...	...	10	,,	...	0
,,	,,	,,	peritonitis	...	3	,,	...	0
,,	,,	,,	abscess ...	...	3	,,	...	1
,,	,,	extra-uterine gestation		...	1	,,	...	0
			Total	...	39	Total	...	3
1878.	Cases of pelvic hæmatocele			...	3	; deaths	...	0
,,	,,	,,	cellulitis ...	...	18	,,	...	0
,,	,,	,,	peritonitis ...	...	20	,,	...	1
,,	,,	extra-uterine pregnancy		...	1	,,	...	0
			Total	...	42	Total	...	1

* Matthews Duncan, September 20, 1877.

1879.	Cases of pelvic hæmatocele	...	9	; deaths	...	1
,,	,, ,, cellulitis ...	...	12	,,	...	1
,,	,, ,, peritonitis ...	...	21	,,	...	1
,,	,, ,, abscess ...	...	8	,,	...	1
,,	,, extra-uterine gestation	...	1	,,	...	0
	Total	...	51	Total	...	4
1880.	Cases of pelvic hæmatocele	...	5	; deaths	...	1
,,	,, ,, cellulitis ...	...	14	,,	...	0
,,	,, ,, peritonitis ...	...	25	,,	...	0
,,	,, ,, abscess ...	...	6	,,	...	0
,,	,, extra-uterine gestation	...	1	,,	...	0
	Total	...	51	Total	...	1
1881.	Cases of pelvic hæmatocele	...	7	; deaths	...	0
,,	,, ,, cellulitis ...	...	3	,,	...	0
,,	,, ,, perimetritis	...	12	,,	...	0
,,	,, ,, parametritis	...	15	,,	...	0
,,	,, extra-uterine gestation	...	0	,,	...	0
	Total	...	37	Total	...	0
1882.	Cases of pelvic hæmatocele	...	2	; deaths	...	0
,,	,, ,, cellulitis ...	...	2	,,	...	0
,,	,, ,, perimetritis	...	15	,,	...	0
,,	,, ,, parametritis	...	24	,,	...	0
,,	,, extra-uterine gestation	...	1	,,	...	0
	Total	...	44	Total	...	0
1883.	Cases of pelvic hæmatocele	...	4	; deaths	...	0
,,	,, ,, cellulitis ...	...	5	,,	...	0
,,	,, ,, perimetritis	...	18	,,	...	2
,,	,, ,, parametritis	...	10	,,	...	0
,,	,, extra-uterine gestation	...	1	,,	...	1
	Total	...	38	Total	...	3
1884.	Cases of pelvic hæmatocele	...	2	; deaths	...	0
,,	,, ,, abscess ...	...	2	,,	..	0
,,	,, ,, parametritis	...	25	,,	...	0
,,	,, ,, perimetritis	...	21	,,	...	0
,,	,, extra-uterine gestation	...	1	,,	...	0
	Total	...	51	Total	...	0
1885.	Cases of pelvic hæmatocele	...	3	; deaths	...	0
,,	,, ,, parametritis	...	25	,,	...	0
,,	,, ,, perimetritis	...	3	,,	...	0
,,	,, extra-uterine pregnancy	...	1	,,	...	1
	Total	...	32	Total	...	1

1886.	Cases of pelvic hæmatocele	...	4	; deaths	...	0
,,	,, ,, parametritis	...	22	,,	...	0
,,	,, ,, perimetritis	...	24	,,	...	0
,,	,, extra-uterine gestation	...	1	,,	...	0
	Total	...	51	Total	...	0
1887.	Cases of pelvic hæmatocele	...	2	; deaths	...	0
,,	,, ,, parametritis	...	10	,,	...	0
,,	,, ,, perimetritis	...	10	,,	...	0
,,	,, extra-uterine gestation	...	0	,,	...	0
	Total	...	22	Total	...	0
1888.	Cases of pelvic hæmatocele	...	3	; deaths	...	0
,,	,, ,, parametritis	...	23	,,	...	1
,,	,, ,, perimetritis	...	11	,,	...	0
,,	,, extra-uterine gestation	...	1	,,	...	0
	Total	...	38	Total	...	1
1889.	Cases of pelvic hæmatocele	...	4	; deaths	...	0
,,	,, ,, parametritis	...	7	,,	...	1
,,	,, ,, perimetritis	...	8	,,	...	0
,,	,, extra-uterine gestation	...	0	,,	...	0
	Total	...	19	Total	...	1
1890.	Cases of pelvic hæmatocele	...	3	; deaths	...	0
,,	,, ,, parametritis	...	17	,,	...	0
,,	,, ,, perimetritis	...	7	,,	...	0
,,	,, extra-uterine gestation	...	1	,,	...	0
	Total	...	28	Total	...	0
*1891.	Cases of pelvic hæmatocele	...	3	; deaths	...	0
,,	,, ,, parametritis	...	7	,,	...	0
,,	,, ,, perimetritis	...	22	,,	...	0
,,	,, extra-uterine gestation	...	0	,,	...	0
	Total	...	32	Total	...	0
1892.	Cases of pelvic hæmatocele	...	1	; deaths	...	0
,,	,, ,, parametritis	...	8	,,	...	0
,,	,, ,, perimetritis	...	25	,,	...	0
,,	,, extra-uterine gestation	...	0	,,	...	0
	Total	...	34	Total	...	0

* F. H. C.

1893.	Cases of pelvic hæmatocele	...	3	; deaths	...	0
,,	,, ,, parametritis	...	11	,,	...	0
,,	,, ,, perimetritis	...	29	,,	...	0
,,	,, extra-uterine gestation	...	4	,,	...	1
	Total	...	47	Total	...	1
1894.	Cases of pelvic hæmatocele	...	2	; deaths	...	0
,,	,, ,, parametritis	...	7	,,	...	0
,,	,, ,, perimetritis	...	28	,,	...	0
,,	,, extra-uterine gestation	...	3	,,	...	0
	Total	...	40	Total	...	0
1895.	Cases of pelvic hæmatocele	...	2	; deaths	...	0
,,	,, ,, parametritis	...	8	,,	...	0
,,	,, ,, perimetritis	...	31	,,	...	0
,,	,, extra-uterine gestation	...	5	,,	...	1
	Total	...	46	Total	...	1
1896.	Cases of pelvic hæmatocele	...	4	; deaths	...	0
,,	,, ,, parametritis	...	5	,,	...	0
,,	,, ,, perimetritis	...	51	,,	...	1
,,	,, extra-uterine gestation	...	8	,,	...	2
	Total	...	68	Total	...	3
1897.	Cases of pelvic hæmatocele	...	5	; deaths	...	0
,,	,, ,, parametritis	...	16	,,	...	0
,,	,, ,, perimetritis	...	22	,,	...	0
,,	,, extra-uterine gestation	...	7	,,	...	3
	Total	...	50	Total	...	3
1898.	Cases of pelvic hæmatocele	...	4	; deaths	...	0
,,	,, ,, parametritis	...	15	,,	...	1
,,	,, ,, perimetritis	...	23	,,	...	0
,,	,, extra-uterine gestation	...	8	,,	...	0
	Total	...	50	Total	...	1
1899.	Cases of pelvic hæmatocele	...	8	; deaths	...	0
,,	,, ,, parametritis	...	10	,,	...	0
,,	,, ,, perimetritis	...	24	,,	...	0
,,	,, extra-uterine gestation	...	14	,,	...	0
	Total	...	56	Total	...	0
1900.	Cases of pelvic hæmatocele	...	4	; deaths	...	0
,,	,, ,, parametritis	...	9	,,	...	0
,,	,, ,, perimetritis	...	25	,,	...	0
,,	,, extra-uterine gestation	...	14	,,	...	2
	Total	...	52	Total	...	2

Seventy-five Original Cases.

The present communication is a careful record of seventy-five cases under my personal charge. The cases have not been picked, but represent all those which have been under my entire charge in St. Bartholomew's Hospital since 1891 (when I began my tenure of office there) in which extra-uterine gestation before the middle of pregnancy or hæmatocele were diagnosed.

I am quite aware that it may be objected that some of the cases were not of this nature, but to this I reply that you cannot have in any one case the advantages both of interference and of non-interference. Surgical interference will give us a certain diagnosis in most cases, as well as material for pathological investigation; non-interference renders diagnosis a matter of inference, but gives us material for natural history. Anyone is at liberty to make his own diagnosis from the cases which I have recorded in detail, but my contention is that, according to the views generally current, they would practically all have been subjected to abdominal section, and that the lives of those who recovered would have been claimed as saved from death.

This position seemed to me long ago very doubtful, and I tried to learn what really did happen to these cases if left alone, taking care that the patients should not suffer for want of operation if necessary. The results are here recorded, and I know of no corresponding series. The present series cannot, for instance, be compared with any in which a surgeon records the results of so many abdominal sections, nor, on the other hand, with a series compiled from the practice of different observers.

The principles which have for many years guided me, and which I have for many years taught, are briefly as follows:

1. Cases of early, unruptured, living, tubal gestation should be operated on without delay.

2. Cases of rupture into the peritoneal cavity, with diffuse hæmorrhage, should be dealt with according to circumstances:

(*a*) If hæmorrhage still continues when they come under observation, some cases ought to be subjected to operation, taking into consideration the probability of the limitation and encapsulation of the blood continuing, and the state of the patient at the time;

(*b*) If seen after hæmorrhage has ceased, they should be treated expectantly.

3. Cases in which the blood has been encapsulated by adhesions

or by the broad ligament should be treated expectantly, and operated on if the pregnancy appears to be progressing.

4. Hæmatoceles which refuse to be absorbed in a reasonable time should be opened, emptied, and drained.

Cases in which bleeding has to be dealt with are best treated by abdominal, rather than vaginal, section.

With regard to the above propositions—

1. Cases of this kind are treated easily and simply by abdominal or vaginal section. On the other hand, such cases are extremely rare, and their diagnosis is always very obscure. If it is easy to diagnose 'extra-uterine,' it is generally impossible to be sure of 'pregnancy.' Moreover, the thing that sends the patient to the doctor is one of the consequences of rupture in almost every case, and previous to this she does not seek advice.

2. Cases of rupture into the peritoneal cavity, with diffuse hæmorrhage, generally involve the death of the ovum and cessation of growth. If the patient gets over the shock, which is often extreme, she generally recovers without further trouble. To operate during the state of shock is in many cases to kill the patient. To operate after the bleeding has ceased, and when shock is being recovered from, is generally unnecessary. (Two cases have especially impressed this upon me.)

3. A large number of hæmatoceles (which are generally in Douglas's pouch, roofed over by adhesions) enclose ova which are dead, and do not require surgical treatment. A minority contain either growing ova or tubal placentæ, which cause recurrent hæmorrhage.

4. Blood is generally absorbed rapidly, if at all. If unabsorbed in a reasonable time, the hæmatocele should be emptied and drained.

The two cases of rupture into the peritoneal cavity with great shock above alluded to are as follows:

C. S., aged forty. Pregnancies, four; children, four. Seen October 26, 1898, 7 a.m. Last menstruation nine weeks ago. About fourteen days ago slight abdominal pain, otherwise quite well till midnight; then pain in abdomen, vomiting. About 5 p.m. desire to defæcate, severe paroxysms of pain which made her shriek. Her temperature, when taken, was 97° F. At 7 a.m. I was sent for, and found her pale, anæmic (but not intensely), sweating profusely, abdomen not swollen, slightly tender, no dulness, pelvis indurated, uterus fixed. 9.15 a.m., pulse small, 120; temperature 95°.

The progress of the case was as follows:

The shock was such that the patient, a highly-intelligent woman, lost all count of time for five days, and on the sixth day after the rupture thought it was the day after. The temperature rose on the second day; on the sixth day it was 102·5°. From the eleventh day it began to sink, and became practically normal on the fifteenth day.

On the fifth day the left, and on the eighth day the right, parotid gland swelled, but subsided. On the tenth day the mass in the pelvis with the uterus (which could not be isolated from it) was the size of a small fœtal head. It became steadily absorbed, and the patient remained quite well. Sir John Williams saw the case with me.

No operation was done.

The second case was as follows:

L. C. F. R., aged thirty-five. Seen June 7, 1897. Pregnancies, four; children, four—last four years ago. Last regular period began April 29. On June 4, eight days late, slight loss preceded by slight pain. At 7 p.m., while shopping after an action of the bowels, sudden pain in left iliac fossa, vomited, no distension, pulse natural at first, then rose to 100, temperature 95·5°, clammy sweat.

June 5, 6 a.m.: Pain in 'diaphragm,' and anginal pain down left arm; difficulty in breathing, with faintness; pulse 130 to 140; abdomen distended and tender on both sides. From 6 a.m. to 8 a.m. apparently moribund, pain concentrated into left inguinal region. From this time she rallied somewhat.

On June 7 I came into the country to see her, and found her with pale lips, very anæmic, dulness in both flanks and hypogastrium, vague resistance the size of a fist in the left posterior quarter of the pelvis.

The question I had to decide was as to operation, which had been urged. I advised against it on the following view: that the tube had ruptured freely into the peritoneal cavity, causing great shock, from which the patient was slightly recovering; that to operate now was probably unnecessary, besides being perilous, but that operation should immediately take place on the first sign of recurring hæmorrhage, and that the surgeon should remain on the spot for some days with this object. As the patient was improving, delay would probably increase her chances if operation became necessary. The blood was rapidly absorbed, no fresh bleeding occurred, and in July, 1899, she was delivered of another child after a normal labour.

My hospital cases, seventy-five in number, are now detailed. In presenting them, I may at once say that my object is not to establish the correctness of any method of treatment, but to contribute, so far as I may, to the formation of a basis for the elucidation of the natural history of the affection. I am free to confess that I am much more familiar with this class of cases than I was ten years ago, and that the indications for treatment are much more established in my judgment than they were at that time.

The after-history, so far as has been possible to obtain it, is recorded in the notes. A large number of patients move frequently and leave no address. All have been written to.

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
1	May 26, 1891	Adelaide Callagan	25	Char-woman	Preg. 5; ch. 5—last, June, 1888	Marr. 10 yrs.	Last normal period about March 12, 1891; morning sickness April, none since May 2; May 2 sudden severe abd. pain, with faintness; daily paroxysms of pain since; real fainting 3-4 times; May 17 pink discharge; 2-3 days later 'two little bits of skin,' said by doctor to be 'abortion'; red disch. since
2	Sept. 2, 1891	Florence Glover	33	House-wife	Preg. 7; misc. 2—last, 8 wks. ago at 2 mo.; ch. 5—last, 22 mo. ago; history of 'shivers' after last confinement	Marr. 16 yrs.	Last period about 3 mo. ago; 3 wks. after the 'miscarriage' violent pains, with shivering
3	July 2, 1892	Ellen Atty	30	House-wife	Preg. 3; ch. 3—last, Oct. 18, 1890	Marr. 7 yrs.	Last normal period ceased May 14; June 11, at time of period, severe abd. pain; the same June 13, 15, 16; since June 18 bleeding from vagina; June 23 retention of urine
4	Nov. 25, 1892	Lavinia Cox	27	Glue-maker	Preg. 2; ch. 2—last, 5 yrs.	Marr. 8 yrs.	Sudden severe abd. pain 8 wks. after last period, and again shortly before admission
5	Dec. 16, 1892	Laura James	24	House-wife	Preg. 3; ch. 3—last, 2 yrs.; in bed 1 mo. after last confinement	Marr. 7 yrs.	Sudden abd. pain and free loss of blood after 6 wks. amenorrhœa; faintness; thought to have miscarried; 2 mo. later another attack; 10 days later another, followed by retention of urine
6	June 2, 1893	Elizabeth Annie Coleman	30	House-wife	Preg. 0.	Marr. 8 yrs.	Last menstruation began March 27 at proper time, and lasted 5 wks.; on its cessation severe abd. pain and vomiting
7	July 25, 1893	Elizabeth Tampling	30	House-wife	Preg. 3; ch. 2—last, 3 years; 'misc. 1,' May 27, end of 2nd mo.	Marr. 5 yrs.	'Miscarriage' about end of 2nd mo.; bled for 3 wks., then abd. pain, rigors, and sweats
8	March 7, 1894	Elizabeth Havard	35	Midwife	Preg. 1; ch. 1—9 years ago	Marr. 11 yrs.	Five weeks' amenorrhœa, then pain and bleeding for 3 wks.; then severe pain and sudden collapse.

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
8th wk.	Mass=fœtal head, in right iliac fossa, elastic	On 21st day after admission mass in right side=tangerine orange; on 28th day after admission a mass about same size in left side; on 53rd day after admission some induration in left side of pelvis, 1 in. thick; temp. ranged to nearly 102° at onset	None	Discharged July 26 (61 days)	Evidences of pregnancy, amenorrhœa, and discharge of 'skins'; evidences of rupture tearing pain, faintness, and formation of a tumour; evidences of blood, rapid absorption
About 7 wks.	Elastic fluctuating mass in pelvis, and rising midway to navel; retention of urine	—	Opened by vagina.	Discharged Oct. 4 (32 days)	Thought to be pus or serum; opened on account of retention of urine; clot found; no fœtus or placenta seen
9th wk.	Very anæmic; tumour 4 in. above pubes, and occupying pelvis, elastic below	Slight temporary increase of left half of mass, July 8; gradual consolidation of tumour	None	Discharged Aug. 20 (49 days)	All the signs of a blood-tumour; seen May 16, 1902. 'Never so well in her life'
8 wks.	Tumour = fœtal head, in right side of pelvis	Slight increase after admission	Abdominal section Jan. 2; hæmatocele roofed over by intestines; no fœtus or placenta	Discharged Jan. 25, 1893 (61 days)	Slight increase in size was thought to indicate operation
6 wks.	Anæmic; pulse 130; no tumour; abdomen resonant	Repeated attacks	Abd. section; abdomen full of clots and bloody fluid; right tube ruptured	Discharged Jan. 11, 1893 (26 days)	Repeated attacks, with signs of bleeding, indicated operation
? 5 wks.	Flattened mass in pelvis, occupying all but right posterior quarter	June 21-27 menstruated; tumour felt as large as an orange; July 13 temp suddenly rose to 103·2°; tumour=fœtal head, and very tender	Abd. section July 14; sac contained fœtus 5 in. long, and communicated with rectum; opening closed	Discharged Sept. 27 (118 days after admission, 75 days after operation)	Repeated increase in size, and especially the sudden rise of temperature, indicated operation
About 2 mo.	Elastic tender mass rising to within 3 in. of navel	—	Puncture *per vaginam* July 28, 3.30 p.m., followed by abd. section 4.30 p.m. same day; ruptured tubal gestation; fœtus about 3 mo.	Died in a few hours	The history of rigors led to mistaken diagnosis of pelvic abscess
5 wks.	Mass=3 mo. preg. on right side of pelvis	14 days after admission mass only 1½ in. thick	None	Discharged Mar. 22 (15 days)	Amenorrhœa, followed by severe pain and the formation of a large tumour, which was rapidly absorbed

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
9	Oct. 4, 1894	Rebecca Thornton	29	Housewife	Preg. 7; ch. 4—last, 19 mo.; misc. 3—last, 2 mo. ago (Aug. 7), at 6 wks.; lost much	Marr. 8 yrs.	Cat. infrequent, sometimes 4-5 mo.; 'miscarried' Aug. 7; bled till Aug. 21, and Sept. 7-14, much pain abd.; temp. 100·4° on admission
10	Nov. 7, 1894	Lucy Wicks	31	Housewife	Preg. 0	Marr. 10 yrs.	Amenorrhœa 6 wks., followed by irregular losses; again 6 weeks' amenorrhœa, with swelling of abd. and tenderness of breasts, followed by repeated loss of blood
11	Nov. 21, 1894	Mary Anne Jones	41	Fancy-box-maker	Preg. 10; ch. 10—last, 8 yrs.	Marr. 20 yrs.	Amenorrhœa 7 wks.; slight loss 5 wks.
12	Dec. 3, 1894	Elizabeth Bailey	27	Housewife	Preg. 3; ch. 3—last, 15 mo.	Marr. 7 yrs.	Last regular period beginning of Oct.; bleeding began 2 weeks later; 2 days after its onset violent abd. pains, with vomiting; two similar attacks since—last, Dec. 1, 'intense agony'
13	March 27, 1895	Annie Chambers	33	Bookbinder	Preg. 3 (?); ch. 1—Nov., 1893; misc. 2 (?)—(*a*) 1882, followed by severe pain in abd., in bed 3 mo.; (*b*) 10 wks. ago (very doubtful)	Marr. twice—(1) æt. 17; (2) æt. 22	10 wks. ago sudden violent pain in lower abd.; 5 wks. later began to feel ill again
14	Sept. 3, 1895	Amelia Emburcy	29	Housewife	Preg. 0	Marr. 10 yrs.	Amenorrhœa 10 wks.; sickness and faintness in morning; breasts enlarged. For the last 3 (of the 10) wks. laid up with 'inflammation'; passed some offensive clots; since then irreg. losses; 8 wks. diff. mict.; catheter 10 days ago
15	Feb. 2, 1896	Ellen Hutchins	33	Laundry work	Preg. 2; ch. 1—5 yrs. ago; misc. 1 (1st preg.)	Marr. 6 yrs.	Last reg. menst. end of Nov.; flow greenish and unlike blood; 3 wks. ago (Jan. 12) sudden pain in back and legs, repeated 2 days later; Jan. 19 gush of blood with severe pain; decidual membrane in vagina on admission
16	Feb. 8, 1896	Mary Anne Shimmonds	37	Housewife	Preg. 9; ch. 7—last, July, 1894; misc. 2—last, 2 yrs. ago	Marr. 17 yrs.	In bed 3 wks. after last confinement; red lochia 2 months; ever since aching in left groin at times; last reg. period in Oct.; irreg. hæm. ever since; since Dec. 1 aching in left groin, etc.

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
?	Mass=cricket ball, soft spot in centre	—	Opened *per vaginam* Oct. 10; clot; no fœtus or placenta	Discharged Oct. 28 (24 days)	History imperfect, on account of irregular menstruation; seen May 1, 1902; child born May, 1899; periods quite regular; is better than before operation
About 6 wks. on 2 occasions—June to Aug., Aug. to Oct.	Elastic mass=small orange	Temp. remained high every night (101-102°); Dec. 8 mass much smaller, hard, and nodular	None	Discharged Dec. 11 (34 days)	Probably blood, from its rapid absorption
7 wks.	Obscurely elastic tumour reaching slightly above the brim	—	Abd. section Nov. 30; blood enclosed by adhesions; no placenta or fœtus	Discharged Jan. 14 (54 days)	—
2 wks.	No anæmia; rounded tender elastic mass size of 2 fists occupying nearly whole of pelvic cavity; cervix not soft	—	Abd. section Dec. 7; subperitoneal rupture of r. tube about its middle; no fœtus or placenta seen	Discharged Jan. 12 (40 days)	Indication for operation, repeated attacks of violent pain
?	Serous secretion in breasts; mass filling pelvis, displacing uterus forwards, and rising to within 1½ in. of navel; soft spot behind cervix	—	Opened *per vaginam* March 29; some 15 oz. of clot; a placenta 2×2 in.; no fœtus seen	Discharged April 23 (27 days)	According to later experience, this would probably have been left without operation
10 wks.	No secretion in breasts; indefinite mass in left iliac fossa reaching to level of iliac spine; irregular round swelling behind cervix, elastic in centre; uterus pushed forwards; cervix not soft	—	Abdominal section Sept. 13; old decolourized blood in Douglas's pouch; broad ligament cyst	Discharged Oct. 12 (39 days)	—
About 6 wks.	Mass = orange in left posterior quarter of pelvis; milk in both breasts	—	Abdominal section Feb. 7; tubal abortion in Douglas's pouch: orifice of tube dilated; fœtus found; cavity enclosed by adhesions	Discharged March 25 (52 days)	According to later experience, would probably not have been operated on
Since last period	Secretion in breasts; mass=small orange in right posterior quarter, elastic	—	Opened by vagina Feb. 13; blood cyst	Discharged March 7 (27 days)	Opened as a pelvic abscess

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
17	April 6, 1896	Emma Nunn	44	Housewife	Preg. 7; ch. 5—last, 4 yrs. ago; misc. 2 — last, before 4th child	Married	Regular till 6 wks. ago; since then continuous bleeding; large clots for last month; much pain in hypogastrium and sacrum; fainted several times
18	May 22, 1896	Mary Anderson	31	Charwoman	Preg. 1; ch. 1—Nov., 1895	Marr. 6 yrs.	Has lost blood ever since last period, 3 wks. ago; May 12 passed a 'large piece of flesh'; severe bearing down; May 22 shivered
19	Nov. 25, 1896	Sophie Davis	36	Machinist	Preg. 8; ch. 7—last, Jan., 1895; 'misc.' 1—Nov. 12, 1896	Marr. 21 yrs.	Last reg. period ended Aug. 16, 'rather free'; end of Oct. pain in right iliac fossa; Nov. 1 labour-like pains and bleeding; Nov. 12 'miscarried'; since then labour-like pains and bleeding; Nov. 12-22 shivering and sweating
20	Dec. 3, 1896	Mary Jane Wilkinson	34	Box-maker	Preg. 8; ch. 5—last, Aug., 1894; misc. 3 — last, Oct. 31 at 6 wks. (very doubtful)	Marr. 15 yrs.	Last period ceased Sept. 18; Oct. 24 weight in lower abdomen, felt ill; Oct. 29 clear blood; Oct. 31 much clotted blood; slight bleeding till Nov. 2, then ceased; Nov. 14 abd. pain, mostly in left side of abdomen, becoming labour-like
21	Feb. 4, 1897	Marian Hartley	39	Housewife	Preg. 4; ch. 4—last, 2½ yrs.	Marr. 14 yrs.	Cat. regular till end of Oct., 1896, then loss of blood till end of Nov.; lost blood from end of Nov. to 1st week in Dec.; again lost blood 8 days end of Dec.; then, after clear interval of 9 days, lost blood till admission
22	Feb. 16, 1897	Louisa Mason	34	Housewife	Preg. 0	Marr. twice—(1) æt. 21 to 25 (widow 7 yrs.); (2) æt. 32 (2 yrs. ago)	Last normal period ended Dec. 19, 1896; Feb. 21 violent pain, faintness, bleeding, which has never ceased; Feb. 15 a cupful of clots and a decidual cast; Feb. 16 severe pain, collapse

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
Since last period	Markedly anæmic; boggy mass behind uterus, not rising above brim	Sudden collapse 12 noon, April 6; pain, unconsciousness, pulselessness, resonance in both flanks impaired	Abdominal section 3 p.m. same day, April 6; 3 hours after collapse; dark blood in abdominal cavity; left tube ruptured; clot and 3 mo. fœtus in Douglas's pouch	Death from peritonitis 3rd day	—
Since last period	Looks ill; temp. 101·2°; pulse 100; elastic resistance fills pelvis and rises a little above the brim	—	Opened by vagina May 22; dark clots and blood; no fœtus or placenta	Discharged June 23 (32 days)	Indication for operation—high temperature; letter received May 2, 1902: quite well for 2 years after
About 6 wks.	Elastic mass = small orange in left posterior quarter of pelvis; uterus = 3 in., far back in front of left sacro-iliac joint; slight serous secretion in right breast	Dec. 2 induration = small fœtal head, and rises to the navel	Abd. section Dec. 4; right tube ruptured, size of a kidney; blood-clot to navel and in Douglas's pouch, encapsuled	Discharged Jan. 20, 1897 (56 days)	Indication for operation — rapid growth of tumour
6 wks.	Anæmic, in great pain; temp. 97·2°; pulse 96; fixed tender hardness in left side of pelvis, rising to brim, elastic in one spot	No increase of induration; Dec. 11-18 hectic temp. rising to 104° F., with much pain; then became normal, and pain subsided; Jan. 20 all induration absorbed; uterus fixed to left side of pelvis; no escape of fluid seen	None	Discharged Jan. 27, 1897 (55 days)	—
?	Marked anæmia; breasts look active, but no secretion; obscurely elastic mass, size of a fist, pushing uterus forward	Mass rapidly absorbed; by Feb. 19 it had disappeared	None	Discharged Feb. 21 (17 days)	Formation of an elastic tumour with irregular bleeding, and rapid absorption of the mass; letter received May 1, 1902: patient fairly well since leaving hospital
6½ wks. (45 days)	Somewhat anæmic, in pain; abd. distended and very tympanitic; firm tumour in hollow of sacrum, rising above brim; uterus pushed to the left and downwards; breasts inactive	—	Abd. section Feb. 17, the day after admission; mass of clots in abdominal cavity; left tube ruptured; blood surrounded by adhesions	Died on 3rd day	Case urgent on admission

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
23	March 23, 1897	Ellen Wansbury	29	Housewife	Preg. 3; ch. 3—last, 1891	Marr. 10 yrs.	Bleeding began as a normal period, but lasted Jan. 24 to Feb. 24, brown; Feb. 24-28 more profuse; since March 10 severe pain; since March 21 very profuse
24	May 3, 1897	Ellen Bray	29	Housewife	Preg. 3; ch. 3—last, Nov., 1896, at 7 mo.	Marr. 6 yrs. ago	Cat. reg.—last, 5 wks. ago; since then a bright red discharge, with clots; very profuse till 3 wks. ago; for 3 wks. pain in abdomen and sacrum, and severe bearing down
25	May 13, 1897	Lucy Fitzmaurice	26	Housewife	Preg. 1; ch. 1—2¾ yrs. ago	Marr. 4 yrs.	About a year ago a lump in hypogastrium, which disappeared in 4-5 wks.; on May 7 lump reappeared, with intense intermittent pains till admission; lately blood-stained discharge
26	May 24, 1897	Louisa Batkins	32	Housewife	Preg. 6; ch. 6—last, Jan. 1, 1891	Marr. 14 yrs.	Since May, 1896, periods increasingly profuse; 3 mo. ago lost blood 6 wks.; clear 6 wks.; loss again for 6 wks.; on May 8 ut. large = 3½ in.; no tumour found; May 9 sudden onset of pain, continuous since; temp. 102·6° on admission
27	July 28, 1897	Emma Edwards	27	Housewife	Preg. 5; ch. 5—last, 2½ yrs. ago	Marr. 8 yrs.	Periods painful for 6 mo., not before; last normal period ended July 11, followed immediately by pain and bleeding till admission
28	Sept. 26, 1897	Mary Payne	38	Housewife	Preg. 6; ch. 6—last, 1881	Marr. 22 yrs.	Last reg. period about June 24; lost blood July 8, 9, Aug. 5; on Aug. 6 passed ½ pint or more of 'water,' which made her sore, and lasted 2 days; in bed all Aug.; frequent vomiting; labour-like pains; Aug. 29 to Sept. 4 bright blood with clots; Sept. 24 bled again

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
Symptoms began at the time of a period	Very anæmic; induration nearly filling pelvis	3 days after admission much worse, much more anæmic; flanks dull	Abd. section March 27; much bloody fluid in perit. cavity; clots in pelvis; fœtus = 6 wks. and early placenta; left tube ruptured	Died in 48 hours with high temperature	Indication for operation—increasing anæmia
Symptoms began at the time of a period	2 days before admission a rounded, obscurely elastic pelvic tumour filled the pelvis, and pressed the cervix against the pubes	10 days after admission cervix was fixed to the left of the pelvis; a little hardness behind it, not more than 1 in. thick	None	Discharged June 2, 1897 (30 days)	Rapid absorption of a tumour whose growth was marked by pain and bleeding, almost certainly blood; no direct evidence of pregnancy; letter received May 2, 1902: is very well; 'had one bout of the same as when I came into the hospital, but kept at home in bed 5 wks.'
Symptoms began 4 days after last period (April 30 to May 3)	No anæmia; mass, = child's head, nearly to navel, very tense and tender, filling pelvis, and pushing uterus to left	Gradual diminution of symptoms and of tumour; on June 2 the hardness was not more than 1½ in. in vertical diameter	None	Discharged June 5 (23 days)	Recurrence and rapid absorption point to blood; no direct evidence of pregnancy; seen May 8, 1902; amenorrhœa after leaving hospital till May, 1901; then lost blood for 5 days; again 2 wks. later for 4-5 days; since then amenorrhœa; seen May 16, 1902; pelvis natural, except that cervix is to left side
?	Anæmic; tongue streaked; obscurely elastic mass in pelvis, rising to navel, pushing uterus forwards; sound = $3\frac{3}{4}$ in.	Temp. raised 3 wks. (highest 103·2°), then subnormal; on June 14 mass with uterus = orange	None	Discharged June 26 (33 days)	Almost certainly blood from rapid formation and absorption of the tumour; no direct evidence of pregnancy; letter received May 2, 1902: quite well
Symptoms immediately followed a period	Intense anæmia; pulse 142; temp. 100·8°; in left side of Douglas's pouch a mass = hen's egg; uterus against right wall of pelvis forming a mass = cricket-ball; sound 2½; signs of free fluid in abdomen	Refused operation; left hosp. Aug. 18 much better; readmitted Aug. 26; Aug. 27 pelvis normal except fixation of uterus	None	Discharged Sept. 1 (35 days)	Almost certainly blood; some of it apparently free in peritoneum; no direct evidence of pregnancy
? About 15 days	No marked anæmia; temp. normal; in left anterior quarter of pelvis a mass = orange, not elastic, not fixed, adherent to uterus	Lump became firmer and somewhat smaller; temp. somewhat raised 3 days before patient went out	None	Discharged herself Oct. 11	The rise in temp. at the end of the case may have indicated approaching suppuration, but this has not followed other similar rises of temp. in this series of cases

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
29	Oct. 6, 1897	Caroline Coles	24	Housewife	Preg. 2; ch. 1—April, 1893; misc. 1 (?)—April, 1894	Marr 5 yrs.	Periods never regular; last, June 20-22; never well since 'misc.' in April, 1894; since July, 1897, great pain in abd. and back; worse lately; abd. getting larger; does not think she is pregnant; micturition difficult and painful
30	Dec. 16, 1897	Elizabeth Roberts	25	Housewife	Preg. 3; ch. 2—last, 2 yrs.; misc. 1—at 5th mo., March, 1897	Marr. 5 yrs.	Never well since misc. followed by inflammation in right side; periods every 21 days; last ended Nov. 27; about Dec. 1 breasts slightly enlarged, painful, secreting milk; Dec. 7 began to lose blood; Dec. 13 lost half a pint; Dec. 14 sudden pain right iliac fossa, felt faint; pain and bleeding ever since
31	Jan. 6, 1898	Elizabeth Mitten	33	Housewife	Preg. 3; ch. 2—last, 8½ yrs. ago; misc. 1—9½ yrs. ago	Marr. 12 yrs.	Amenorrh. '3½ months,' till Dec. 23, 1897; 1 mo. ago sudden pain in hypogastrium, again Dec. 23; lost blood Dec. 23, 24, 31, a few small clots
32	Feb. 4, 1898	Maria Johnston	38	Housewife	Preg. 6; ch. 3—last, 1894; misc. 3—last, Aug., 1897	Marr. 13 yrs.	Last reg. period Dec. 6-11, 1897; Jan. 16 severe abdominal pain with great pallor; Jan. 18 to Feb. 3 slight red discharge
33	Feb. 10, 1898	Caroline Leather	32	Housewife	Preg. 5; ch. 2—last, 2 yrs.; misc. 3—last, Jan. 11 at about 10 wks.—*i.e.*, passed a mass like an egg ½ in. long, and a mass like an after-birth 6 in. long	Marr. 6 yrs.	Miscarried end of Oct., 1897; then amenorrh. till Jan. 4, 1898; Jan. 11 'miscarried'; severe pain Jan. 1, and again after Jan. 11 till admission

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
Symptoms began since last menstruation; 15th wk. ended Oct. 3	Breasts active; bladder up to navel; soft mass filling pelvis, irreducible; sound 4 in.	No change; continuous pain	Abdominal section Oct. 15; macerated fœtus about 4th mo.; pregnancy in right tube; mass enclosed by adhesions	Discharged Nov. 23; returned twice since; last time, July, 1900, with high temp. and severe pain; mass = orange in left side of pelvis	Operation did not restore patient to comfort immediately; letter received May 1, 1902: very well since leaving hospital
10 days	Very anæmic; pelvis tender; against right sacro-iliac joint a tender, fixed mass = small egg	Temp. rose (100-101°); pulse 106; on Dec. 22 mass in pelvis = orange; on Dec. 27 = fœtal head, lower part distinctly elastic; from this time symptoms rapidly subsided and mass diminished	None	Discharged Jan. 22 (37 days)	All the signs and symptoms of tubal gestation (? mole), the blood becoming rapidly absorbed
3½ mo.	Not anæmic; pelvis filled with rounded, somewhat elastic resistance from brim nearly to pelvic outlet, pressing cervix against right pubic ramus	Jan. 12 pain much worse, vomiting	Abdominal section Jan. 12; some blood in peritoneal cavity; tubal mole = hen's egg in right tube (ruptured), with embryo 1 in. long; main mass enclosed by adherent bowels	Discharged Feb. 16 (41 days)	Embryo probably died in 1st mo.; then hæmorrhage into tube; rupture of tube in 3rd mo.; bleeding into peritoneal cavity Jan. 11-12
5 wks.	Some anæmia; obscurely elastic resistance in right posterior quarter of pelvis rising to the brim; some secretion in breasts	Temp. raised; pain; occasional faintness; retching; red discharge; from Feb. 21 rapid improvement; Feb. 28 nodular hardness ½ in. to ¾ in. thick is all that remains in pelvis	None	Discharged March 9 (33 days)	Fairly complete history and signs of tubal gestation
About 10 wks.	Slight anæmia; mass = fist in left posterior quarter of pelvis	Examined under anæsthetic March 16; mass the size of a tangerine orange burst during manipulation; posterior colpotomy immediately; clot removed; a torn sac found, but no fœtus or placenta	Posterior colpotomy March 16	Discharged April 6 (55 days)	Operation indicated by rupture of hæmatocele under manipulation March 16; seen May 5, 1902: quite well; menstruation regular

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
34	March 23, 1898	Annie Sparkes	27	Housewife	Preg 5; ch. 5—last, Dec., 1896	Marr. 10 yrs.	Last menstruation first week in Jan.; on Feb. 16 sharp abd. pain, fainted; Feb. 20-23 passed 'blood and water'; vomiting, diarrhœa, increased pain, difficult mict., swelling of abdomen
35	March 24, 1898	Emma Donovan	26	Housewife	Preg. 3; ch. 2—last, 4 yrs.; misc. 1—3 yrs. ago	Marr. twice—(1) æt. 18 to 21; (2) Oct., 1897 (6 mo.).	At beginning of October (period being overdue 7 days) pains in small of back, dizziness; gush of blood and clots, then greenish offensive fluid; discharge lasted 21 days then jaundice, and passed gall-stones with colic
36	Nov. 12, 1898	Louisa Caroline Merrydew	21	Housewife	Preg. 1; ch. 1—4 yrs. ago	Marr. 4 yrs.	Amenorrhœa 9 weeks, vomiting 1 mo.; Nov. 8 severe pain in abdomen, slight red discharge, felt faint; repeated attacks of pain since
37	Nov. 19, 1898	Alice O'Brien	23	Rag-sorter	Preg. 4; ch. 4—last, April, 1898	Marr. 7 yrs.	Catamenia regular till Oct. 11, bleeding ever since; slight pain till Oct. 30, then severe labour-like pains; repeated Nov. 16; vomiting since Nov. 16
38	Jan. 5, 1899	Jane Piesse	30	Paper-bag-maker	Preg. 5; ch. 4—last, Oct., 1895; misc. 1—9 yrs. ago	Marr. 9 yrs.	Last regular period Oct. 28-31, then morning sickness; Dec. 19 labour-like pains; Dec. 21-26 slight bleeding; Dec. 28 pain severe
39	Jan. 11, 1899	Jane Neill	26	Housewife	Preg. 1; ch. 1—5 years ago	Marr. 7 yrs.	Last menstruation Nov. 10-17; Dec. 26 sudden pain in lower abd.; Jan. 11 sudden pain, followed by slight red discharge till admission
40	Jan. 11, 1899	Jenny Marion Johnson	22	Housewife	Preg. 2; ch. 1—June, '98; misc. 1, at 5 mo., Aug., 1897	Marr. 2 yrs.	Last menstruation Oct., 1898; then amenorrhœa 6 wks.; loss ever since; slight abdominal pain 3 wks.

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
About 6 wks.	Anæmic, very pale; tense elastic swelling in Douglas's pouch, pushing uterus forward	Increase of pain, rise of temp. and pulse; on March 29 swelling had reached navel; left flank dull in its lowest part, with temp. 102°, pulse 126	Abdominal section March 29; in the peritoneum some blood-stained fluid; gestation in left broad ligament; placental mass = small orange	Discharged April 23 (31 days)	Subperitoneo-pelvic gestation, with subsequent intraperitoneal rupture
5 wks.	Secretion in both breasts; elastic mass rising out of pelvis = large child's head; patient not anæmic	On April 4 mass had shrunk to the size of a fist, and was much harder	None	Patient obliged to leave for home on April 16	Almost certainly a hæmatocele; observation interrupted
9 wks.	Temp. 100°; marked anæmia; mass in pelvis, rising to level of right iliac spine; left flank dull; mass is elastic in left posterior quarter of pelvis	Symptoms subsided, but signs remained; Nov. 14 passed a cast of the uterus	None	Discharged Dec. 27 (45 days)	A fairly complete history of ruptured tubal gestation; letter received May 2, 1902: quite well; has a baby a year old
Symptoms began at a period	No marked anæmia; tender mass in left posterior quarter, as large as a fist (with the uterus); milk in breasts	Temp. high for 6 days, then rapidly subsided; on Dec. 5 the mass (with uterus) was the size of an orange	None	Discharged Dec. 7 (18 days)	—
7 wks.	Not anæmic; secretion in both breasts; soft and partly elastic tumour in left posterior quarter = fist	(Notes imperfect)	None	Discharged Feb. 7 (33 days)	(Notes imperfect) May 1, 1902: patient seen, but was in too great a hurry to stay and give details
5½ wks.	Temp. 100°; pulse 116; pale and in pain, but not anæmic; in left posterior quarter elastic resistance = yolk of a poached egg; uterus to right	Severe pain and free loss for a week after admission; temp. 97-99°; Jan. 22 cast of uterus passed; pain less till Feb. 2, when pain increased, with decided anæmia; mass (with uterus) = small fœtal head, chiefly on left side; no dulness in flanks; March 7 mass = orange; March 29 no mass, but a flat layer an inch thick	None	Discharged March 11 (59 days)	Fairly complete history of ruptured tubal gestation with repeated bleeding
6 wks.	No anæmia; uterus fixed and surrounded by fixed tender hardness, elastic behind; breasts inactive; temp. 102°	Feb. 6 mass confined to left posterior quarter, hard, nodular, less than an inch thick; temp. normal after 4th day after admission	None	Discharged Feb. 1 (31 days)	Almost certainly blood; (*a*) elastic on admission; (*b*) rapid absorption when kept at absolute rest; (*c*) following amenorrhœa; (*d*) accompanied by bleeding

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
41	Jan. 19, 1899	Jessie Trott	26	Housewife	Preg. 4; ch. 3—last, 3 years; misc. 1—2 wks. ago	Marr. 7 yrs.	Last menstruation 10 wks. ago; then amenorrhœa 8 wks.; then (2 wks. before admission) 'miscarried'; blood and clots since; severe pain began 2 days after miscarriage, and has lasted since
42	April 25, 1899	Rebecca Goodman	26	Housewife	Preg. 2; ch. 2	—	Last menstruation, Jan. 3; Feb. 27 to Mar. 3 bleeding, no pain; March 13-14 slight loss; March 21 sudden pain in abd., fainted, pain lasted 4 days; April 6 another less severe attack; April 17 another more severe, fainted 3 times; April 25 another, fainted 4 times
43	May 24, 1899	Marian Palmer	31	Bonbon-worker	Preg. 4; ch. 4—last, at 7 mo., 1894	Marr. 14 yrs.	Last menstruation ceased March 26, 1899; April 28 began to lose blood, which lasted 12 days (April 28 to May 9); then again May 12-28, with clots=hen's egg; April 30 pain in right iliac and sacral regions
44	June 13 1899	Mary Crowe	35	Housewife	Preg. 6; ch. 2—last, 7 yrs. ago; misc. 4; 3 since last child—last, 3 yrs. ago	Marr. 15 yrs.	Last menstruation June 10-17; about May 9 sudden severe pain in rectum, spreading over abdomen; some vomiting; much better last 14 days
45	Aug. 1, 1899	Gertrude Jacquet	22	Housewife	Preg. 1; ch. 1—18 mo. ago	Marr. 2 yrs.	Last menstruation May 26; 6 mo. pain in right iliac fossa; 8 mo. yellowish discharge; Aug. 2 slight bleeding
46	Sept. 30, 1899	Harriet Martin	35	Housewife	Preg. 3; ch. 2—last, June, 1898; misc. 1—2 years ago	Marr. 5 yrs.	Last menstruation June 30; absent till Aug. 13; since then continuous loss, with pain in abdomen; 7 days ago swelling of right side of abdomen, which subsided with discharge *per rectum*

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
8 wks.	Some anæmia; mass size of an egg, fixed, firm, and tender, in left posterior quarter of pelvis	Feb. 10 mass = bantam's egg	None	Discharged Feb. 12 (24 days)	Fairly complete history of ruptured tubal gestation; seen May 1, 1902; child born Aug. 1901
8 wks.	Looking very ill, pale, collapsed, anæmic; temp. 97°; pulse 132; breasts active; abd. distended; dependent parts dull, dulness changing with position; fluid thrill; vague resistance in vaginal roof; uterus fixed	—	Abd. section at once; much blood in peritoneal cavity; living fœtus of 3½ mo. among bowels; placenta attached to left broad ligament and neighbouring coil of large intestine	Discharged June 5 (42 days)	Seen May 1, 1902; child born May 4, 1901
33 days (4 wks. and 5 days)	Breasts looking active, but no secretion; smooth, rounded, displaceable, elastic mass = cricket-ball to right of uterus	June 2 lump = small orange; July 10 still smaller	None	Discharged June 10 (18 days)	Much like a tubal mole; letter received May 1, 1902: much better since leaving hospital
Symptoms preceded what appeared in time to be a normal period	Fixed, very firm, tender induration in Douglas's pouch, pushing uterus downwards and forwards	June 21 no marked anæmia; breasts inactive; the induration is nodular, high up, scarcely below pelvic brim; June 23 a little yellow secretion in right breast; irregular, rounded swelling fills pelvis, nowhere elastic	June 23 induration aspirated in two places, 2 drachms of clear fluid; June 28 abd. section, sac = bantam's egg in outer end of right tube, blood; no fœtus or placenta found; cyst communicated with rectum	Discharged Aug. 2 (51 days)	The history was deceptive, and so was the aspiration; the abd. section was performed on the possibility of an inflamed ovarian tumour; probably extra-uterine gestation, but not proved; seen May 1, 1902: since discharge from hospital quite well, except for a misc. Sept., 1901, and red discharge March, 1902; well since
10 wks.	Fixed, obscurely elastic mass to left of uterus = orange; slight serous secretion in breasts	Mass got smaller and densely hard	None	Discharged Aug. 12 (12 days)	Secretion in breasts, amenorrhœa, and a tumour, elastic at first, and soon becoming smaller and densely hard, make a tubal pregnancy likely
6 wks.	Breasts inactive; elastic swelling filling pelvis and pushing uterus forward; cervix firm; no mauve coloration; temp. practically normal	—	Opened *per vaginam* Oct. 6, and found to contain old blood-clot	Discharged Nov. 15 (46 days)	The history of a swelling, subsiding with a discharge *per rectum*, led to a suspicion of abscess and to opening of the tumour; letter received May 1, 1902: quite well

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
47	Nov. 22, 1899	Maria Foster	23	Housewife	Preg. 2; ch. 2—last, Nov. 4, 1898	Marr. 3 yrs.	Periods never regular, sometimes absent 6 wks.; weaned child in Aug.; period returned Sept. 16; on Oct. 23 (1 wk. overdue) began to lose blood, and has done so ever since; Oct. 26 pains in abdomen; Nov. 18 diff. micturition
48	Feb. 1, 1900	Sarah Turner	34	Housewife	Preg. 3; ch. 2—last, 8½ yrs.; misc. 1—11 yrs. ago	Marr. 11 yrs.	Since last confinement pain and swelling in lower abdomen, which has gradually increased; last regular period ended 3½ wks. ago; reddish-brown discharge 3 wks.
49	Feb. 2, 1900	Britannia Ives	33	Laundress	Preg. 6; ch. 4—last, May, 1896; misc. 1—before last confinement	Marr. 11 yrs.	Menst. regular, but for last 6 mo. green water rather than blood—last at beginning of Dec.; about Jan. 26 slipped and fell, but felt nothing amiss; Jan. 30 sudden pain in right iliac fossa, lasting 6 hrs., vomited; Jan. 31 pain returned, and has been very severe since; Feb. 1 red discharge, vomiting, till admission
50	April 11, 1900	Rosetta Rudley	33	Housewife	Preg. 1; ch. 1—12 yrs. ago	Marr. 13 yrs.	Last menstruation beginning of Feb.; Feb. 6 violent vomiting, lasting 3 wks.; Feb. 12 pain in bowel, followed by discharge of blood *per rectum*; a few days later pain in right iliac fossa, which has increased, and a brown offensive discharge; from beginning of March rather free sanious discharge
51	April 17, 1900	Ellen Hawke	36	Housewife	Preg. 5; ch. 1—13 yrs. ago; misc. 4, at 2 mo.—last, 7 yrs. ago	Marr. 16 yrs.	Menses always irregular, 14-21 days; last, Jan. 17-20; since then dull pain in hypogastrium; April 3 sudden faintness, with increased pain; April 16 retention of urine

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
5 wks.	Some anæmia; elastic mass filling hollow of sacrum, reaching in left iliac fossa to level of navel, and pushing uterus against pubes	Dec. 6 much decolorized blood passed *per rectum* for several days; Dec. 13 abd. tumour gone; in left posterior quarter of pelvis obscurely elastic resistance = egg; some thickening in pelvis; Jan. 8, 1900, mass = half an egg	None	Discharged Jan. 10, 1900	Hæmatocele discharged *per rectum*
3½ wks.	Somewhat anæmic; tumour = child's head, in right posterior quarter of pelvis, reaching from mid-pelvis to navel, resonant on percussion; uterus pushed against pubes; cervix not soft; sound 2½ in.; uterus nearly fixed; tumour slightly displaceable, with some pain; pulse 118; temp. normal; breasts inactive	Increasing anæmia, pain, enlargement of tumour and abd., with faintness and shortness of breath, vomiting at times; dulness in both flanks, and in hypogastrium midway to navel; then symptoms subsided and abd. became smaller; then dulness rose to navel and left flank, right flank becoming resonant; pelvic tumour extended to pelvic outlet and became markedly elastic	Abd. section March 7; blood enclosed by adherent intestine; gestation sac in right tube = orange, with placenta, but no fœtus	Discharged April 18 (77 days)	History very misleading at first; progressive anæmia, with growth of the tumour, threw light afterwards on the condition
About 9 wks.	Anæmic; pulse 140; temp. 101·2°; breasts active; indefinite resistance in hollow of sacrum, most marked in left posterior quarter; uterus pushed against pubes	—	Abd. section Feb. 2; dark clotted blood in peritoneum; rent in right tube; no fœtus or placenta seen	Died Feb. 6	—
Followed last menstruation closely	Breasts active; abdomen very tender; rounded, fixed, slightly elastic resistance in right side of pelvis, pushing uterus to left and fixing it; no anæmia	April 23 resistance and tenderness almost gone; mass on right of uterus about 1½ in. horizontally, and 1 in. vertically, and is no longer elastic	None	Discharged May 5 (24 days)	Elastic tumour rapidly diminishing, with a sanious discharge by the bowel, proves a hæmatocele; activity of breasts seemed to point to pregnancy
Discomfort ever since; faintness 10½ wks. after last menses.	Marked anæmia; breasts active; abdomen much distended; resonance impaired below navel and in right flank; soft, elastic resistance filling hollow of sacrum and pushing cervix forwards; cervix not soft	April 20 sudden increase of pain several hours, increase of the tumour and of the anæmia; April 21 somewhat better; April 22 two slight attacks of pain; April 23 violent pain, with blanching and some dyspnœa; no dulness of flanks	Abd. section April 23; blood-clot in peritoneal cavity, and a fœtus of the 5th mo., 5½ in. long; gestation sac in right tube	Died April 23	Operation delayed for some reason, which cannot be recalled; to the best of my belief change in patient not reported to me till too late; should have been performed on April 20, when the signs of bleeding recurred; the size of the fœtus (which, of course, could not be previously known) would have probably prevented its absorption

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
52	May 8, 1900	Ruth Lake	28	Housewife	Preg. 4; ch. 3—last, Jan., 1896; misc. 1—Nov. 29, 1899	Marr.	Last regular period end of Aug.; then absent till Nov. 6; lost blood till Nov. 25; 'passed a mole'; since then periods too frequent, clotted, but lasting only 2-4 days; dull aching pain in right side of pelvis 3 mo.
53	May 10, 1900	Harriet Dennis	28	Housewife	Preg. 3; ch. 3—last, Jan., 1896	Marr. 7 yrs.	Last normal period ended Jan. 16; Feb 10 passed a large clot, and bled till March 3; again March 10-21, April 12 to May 7, with pain in lower abd.; since then no bleeding
54	May 21, 1900	Caroline Ashmore	27	Housewife	Preg. 1; ch. 1—7 yrs. ago	Marr. 7 yrs.	Last normal period ended early in March; on May 6 had a struggle and felt strained; May 7 violent pain on rising from bed, vomited, felt faint; in bed till May 11; similar attack on resuming work; bleeding May 11-14
55	May 26, 1900	Sarah Middleton	29	Housewife	Preg. 2; ch. 1—1893; misc. 1—1895, at 2 mo.	Marr. 8 yrs.	Last period April 28 to May 4; May 11 sudden severe pain, followed by bleeding, continuing on exertion till admission

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
10 wks.	Some anæmia; breasts inactive; mass = big pear in right posterior quarter of pelvis, extending across Douglas's pouch; uterus to left, not enlarged; temp. normal	Severe pain on and off, but lump grew smaller; left hospital June 25, and returned Aug. 1, pain less, but brown discharge; mass felt like a flabby cyst, about 1½ in thick	Posterior colpotomy Aug. 3; severe bleeding from vaginal wall; mass felt after as before, and was therefore probably not opened; operation not persisted in; patient did not return in Oct. as directed for further treatment	Left hospital with mass smaller, but not absorbed	An imperfect case, but its history is strongly in favour of extra-uterine pregnancy; the mass had much diminished when last seen
Symptoms began about 3 days before an expected period, or 3½ wks. from end of last period	Breasts inactive; obscurely elastic mass = fœtal head, in left side of pelvis, pushing uterus to right side	—	Opened *per vaginam* May 14; macerated fœtus of 3rd mo., placenta and clot	Discharged June 5 (27 days)	History unusual, but presence of an elastic pelvic tumour with bleeding were the salient points; seen May 1, 1902: regular till March 7, 1902; amenorrhœa since
About 2 mo.	Extremely anæmic; pulse 132; mass in left posterior quarter = cricket-ball	On July 23 lump had shrunk to size of an egg; recovery uneventful	None	Discharged June 23 (34 days)	Tube probably ruptured in struggle on May 6; seen May 1, 1902: menstruation regular; pelvis normal
7 days	No anæmia; temp. normal; breasts inactive; two firm, somewhat elastic bodies—one behind cervix and low down, the other on left higher up; each = tangerine orange	May 30 very severe pain in right side of lower abdomen.	Posterior colpotomy June 1; a little fresh darkish blood; each of the masses was rounded, cylindrical, adherent; adhesions shut off peritoneal cavity. The right mass was an ovarian tumour the size of a hen's egg, and a tube = a finger, containing clear fluid and closed; the left mass was also an ovarian tumour like the other; the tube (of the same size) was ruptured, contained in its middle third a fœtus 1¼ in. long, a placenta = plover's egg, and some clot. The right tube was transfixed, tied, and removed; the left clamped and removed	Discharged well June 26 (32 days)	Two ovarian tumours, a hydrosalpinx, and a tubal gestation, ruptured, removed by the vagina

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
56	May 31, 1900	Elizabeth Gibson	42	Housewife	Preg. 17; ch. 12—last, 5 yrs.; misc. 5 (3 since last child)—last, April 27	Marr. 25 yrs.	Last regular period ended Jan. 14; amenorrhœa till April 27, when she 'miscarried,' and had bled ever since
57	June 11, 1900	Annie Cranfield	42	Mantle-maker	Preg. 12; ch. 5—last, 9 yrs.; misc. 7—last 2 yrs. ago at 6 mo.	Marr. 20 yrs.	Last regular period beginning of Oct., 1899; absent till Dec. 20, when bleeding and labour-like pains followed a fall; three subsequent attacks, last on Oct, 26, when she had breathlessness, palpitation, and pain in præcordia; very ill 6 wks.; since beginning of March pain in left iliac fossa and leg, with bleeding; breasts enlarged till Christmas, then shrank
58	Aug. 7, 1900	Ellen Goodson	27	Housewife	Preg. 0	Marr. 18 mo.	About July 17, when about 14 days overdue, sudden pain in right iliac fossa and thigh; about July 24 another attack of pain, with faintness; diarrhœa, sickness and faintness July 28 and 30; Aug. 1 throbbing pain near navel, and ever since
59	Oct. 9, 1900	Maud Nyall	29	Housewife	Preg. 7; ch. 6—last, Dec., 1898; misc. 1—in 1897	Marr. 11 yrs.	Menstruation regular till Christmas, since then intervals 6 to 8 weeks; since beginning of July abd. pain, which began suddenly, and is worse at the periods; since it began it has recurred about every 14 days; last and most severe attack last week, vomited; colourless discharge since July; last period Aug. 29; clots in September

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
14⅔ wks.	Intense anæmia; elastic mass = orange in right posterior quarter of pelvis; uterus apparently empty; cavity 2½ inches	June 23 nothing felt but a soft, elastic movable body = a plover's egg, which burst on being touched; no consequences followed	None	Discharged June 26 (27 days)	Onset of symptoms interpreted by patient as a 'miscarriage,' as often
10 to 11 wks.	No anæmia; boggy, nodular mass = orange in left posterior quarter of pelvis; uterus small in front; some secretion in breasts	June 12 induration in left posterior quarter of pelvis, nodular, flat, nowhere elastic, about 1 in. thick and smaller; on June 22 the induration was almost exactly behind cervix = tangerine orange, markedly elastic	June 25 opened by vagina; old clot; also the greatly dilated fimbriated extremity of the left tube; more clot inside tube, but ampulla would not hold more than a large bean; left ovary and tube clamped and removed; ovary cystic distended; Graaffian follicles, some containing old blood, some clear fluid, some a fibrinous material	Discharged July 14 (35 days); recovery uninterrupted	Apparently a case of tubal abortion; seen May 1, 1902: menstruation regular; quite well; some thickening in Douglas's pouch, but no tenderness
About 6 wks.	Some anæmia; dense; fixed tender hardness, occupying cavity of pelvis, and about 4 in. thick; partly elastic	—	Opened by vagina Aug. 8; apoplectic placenta removed by finger from a separate smooth-walled cavity = fives-ball (? tube)	Discharged Sept. 1 (26 days)	Probably a case of tubal mole; letter received May 1, 1902: slight pricking feelings 'at the side,' but not bad
Doubtful	Some jaundice; sordes on teeth; tongue furred; abdomen full, tender, especially on right side; dulness both iliac fossæ and hypogastrium up to the navel; cervix high up, almost out of reach; mobility impaired; too tender for bimanual examination	Improved for a fortnight, then (Oct. 24) severe pain in right iliac fossa; temp. 100°; Oct. 29 more distension; Nov. 12 rigor; temp. 103° last night, to-day normal; mass = fist felt in right side of pelvis	Abdominal section; Nov. 14 inflamed bowel adherent to mass which was a tubal molar pregnancy = orange in right side; walls of sac 1 in. thick; fœtus 1½ in. long; placenta somewhat offensive	Discharged Dec. 15 (68 days)	Duration of pregnancy uncertain; probable infection of sac from adherent bowel; tubal mole; the diagnosis was uncertain, lying between a twisted ovarian tumour and a tubal gestation

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
60	Oct. 13, 1900	Letitia Beech	23	Machinist	Preg. 2; ch. 1—1897; misc. 1, at 2nd month, Sep. 3, 1900	Marr. 4 yrs.	Last regular period ended June 24; on Sep. 3 'miscarried,' pain preceded and followed this in epigastrium and left hypochondrium, with bleeding
61	Nov. 3, 1900	Amy E. Hinchcliffe	28	Housewife	Preg. 1 (?); misc. 1 (?), Nov., 1898	Marr. 2 yrs.	In August, a week after last menstruation, sudden slight abdominal pain, bleeding very profuse, foot of bed raised; on 21st day vagina plugged; a week later bled again after examination, and again Sep. 12; since August patient has had 2 'periods' and a continuous slight discharge
62	Dec. 7, 1900	Rosa Gilbert	25	Housewife	Preg. 4; ch. 4—last, Oct., 1899; suckled till Nov. 23 (14 days before admission)	Marr. 8 yrs.	Last normal period Aug. 27 to Sep. 3; 6 wks. later (about Oct. 15) another 'period'; 14 days later (about Oct. 29) bleeding recurred and still continues; 5 wks. ago (about Oct. 19) had 'peritonitis'; 3 wks. ago (about Nov. 12) fainted and fell, abdomen swelled, and bleeding began next day
63	Dec 29, 1900	Emily Bolton	38	Housewife	Preg. 7; ch. 6—last, 15 mo. ago; misc. 1, 2 years ago, at 3rd mo.	Marr. 19 yrs	Never regular; suckled child till Aug., when it died; then slight occasional losses; periods apparently normal at end of Oct., Nov., Dec. 8-14; pain in hypogastrium 3 wks.; 2 shivering fits 12 days ago

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
10 wks.	No anæmia; breasts secreting slightly; in left anterior part of pelvis is an elastic mass=child's head, reaching to the navel; uterus 2½ in., behind, empty; vagina mauve; cervix firm	Oct. 31 mass=orange, firm; Nov. 19 mass = egg, and in left posterior quarter; menstruated Dec. 1-5 and Jan. 1-6 (1901) moderately; Jan. 11 behind cervix is—(1) a smooth movable body = ovary; (2) on its left another similar body fixed to (3) an induration = plover's egg, and fixed to the bone; behind this, again, is (4) a soft fixed body, feeling like a thin-walled cyst = plover's egg	None	Discharged Dec. 12 (61 days)	The symptoms occurring at the rupture described as a 'miscarriage'; seen May 1, 1902; menstruation regular; uterus retroverted; both ovaries prolapsed
7 days	No anæmia; mass = orange in left posterior quarter of pelvis, firm, fixed; uterus retroverted and pushed against right side of pelvis; cervix firm; breasts papillæ prominent; no secretion; temp. normal	Nov. 26 anterior lip of cervix looks eroded and bleeds on touch; the mass with the uterus = small orange, smaller, very firm, smooth, not elastic; Dec. 17 mass apart from uterus = egg, very firm; Jan. 21 slight coloured discharge still, sitting somewhat painful, but pain is in *right* iliac fossa, mass disappeared, some general thickening, uterus retroverted and fixed	None	Discharged Jan. 14, 1901 (73 days)	The sudden onset without rise of temperature and the rapid absorption of the mass point to its being blood; the direct evidence of pregnancy is absent
6 wks.	No anæmia; breasts inactive; elastic mass = orange, in left posterior quarter of pelvis; uterus not enlarged, in front of mass; cervix not soft	Jan. 11 mass=tangerine orange, obscurely elastic in some parts; Feb. 8 has had a period of 3 (instead of 5) days, the mass =egg and markedly elastic; April 4 severe pain in *right* side of abdomen; April 12 similar pain on left; period April 18-21; April 26 a mass = walnut attached to supravaginal cervix and movable with the uterus	None	Discharged Jan. 14, 1901 (39 days)	Was suckling at the time of onset of symptoms
Doubtful	Some anæmia; temp. 102°; uterus pushed forwards by an elastic mass= fœtal head; thin-walled, with a feeling of friction or crackling over it; breasts contain secretion	Temp. remained high; patient discharged herself Jan. 6, 1901	None	Self-discharged Jan. 6, 1901 (9 days)	Most likely a hæmatocele, with decomposition and formation of gas; observation cut short

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
64	Feb. 25, 1901	Florence Burden	23	Housewife	Preg. 3; ch. 2—last, 2½ years; extra-uterine gestation=1; operated on Aug. 16, 1900	Marr. 5 yrs.	Last regular period Dec. 28-Jan. 1; then amenorrhœa till Feb. 11; lost blood slightly Feb. 11-21; severe intermitting pains Feb. 11, 12
65	March 28, 1901	Elizabeth Gill	25	Housewife	Preg. 3; ch. 3—last, Sept. 25, 1900; suckled till admission	Marr. (1) æt. 19-22½; (2) æt. 23, 2 yrs.	Pelvic pain since last confinement; last period end of Jan.; Feb. 20, violent labour-like pains, red discharge 14 days; March 7-12 flooded, pain relieved, followed by brownish discharge
66	March 30, 1901	Eliza Griffith	23	Housewife	Preg. 0	Marr. 5 yrs.	Last regular period 8 wks ago; 3 wks. ago (March 10) severe pain in lower abd. on and off for 48 hours; March 13, another attack, lasting 8 hours; March 29, another, lasting till admission; March 29, 'passed half a pint of greenish fluid in 3 min.;' March 30, fainted
67	April 27, 1901	Emily Feather	25	Housewife	Preg. 2; ch. 2—last Jan, 1898	Marr. 7 yrs.	In bed for 6 wks. soon after last confinement with pain in left il. fossa; last cat. Feb. 28; April 7 sudden pain in lower abd.; April 13 tender swelling on left of uterus pushing it to right; April 27-28 marked anæmia; April 29 sudden faintness, became pulseless, revived a little
68	May 18, 1901	Marian Phipps	30	Housewife	Preg. 0	—	Last period 7 wks. before admission; 3 wks. ago, at proper time of period, severe pain in lower abd.; 3 days later discharge of dark blood, which has never ceased; May 18 violent pain

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
6 wks.	No anæmia; breasts inactive; uterus fixed; tender fixed mass in left posterior quarter of pelvis = cricket-ball; not elastic, nodular	Mass became obscurely elastic; also an elastic body = orange in right posterior quarter of pelvis	Abd. section, March 20; mass in left was blood-clot; no placenta or fœtus found; mass on right side was stump of right tube, with omentum adherent; right ovary elastic = walnut	Discharged April 17 (52 days)	Operation advised because of delay in absorption; the mass was well defined, and would probably have been eventually absorbed; a *second* extra-uterine gestation (if it was one); seen May 1, 1902; quite well
About 3 wks.	Temp. on admission = 100°; soon became normal; mass = large child's head; not elastic; filling pelvis; pushing uterus forward	April 10, Mass with uterus = orange	None	Discharged April 13 (17 days)	The violent pain, bleeding, formation of a tumour, which rapidly became absorbed, point to its consisting of blood
5 wks.	Marked anæmia; breasts inactive; abd. full, tender, no dulness; tender elastic mass = small orange in left posterior quarter of pelvis; cervix firm	—	Abd. section, March 30; 3¾ pints of bloody fluid and recent clot in peritoneum; distal end of tube = fives-ball; fimbriated extremity = 2s.-piece, placenta projecting from it; fœtus 1 in. long in peritoneal cavity	Discharged April 27 (29 days)	The case was one of incomplete tubal abortion; the recurrent attacks of severe pain, with marked anæmia, pointed to recurrent free hæmorrhage; the small mass felt was the tube, and not a hæmatocele
5½ wks.	April 29 right side of pelvis occupied by very tender boggy swelling rising a little above brim	April 27 marked anæmia; April 29 sudden faintness, became pulseless, revived a little	Abdominal section April 29; abdomen full of recent clot and dark bloody fluid; ruptured right tube adherent to top of uterus; fœtus of about 3 mo.	Died on the table	This case was only seen by me when *in extremis*; it should have been operated on before
4 wks.	Intense anæmia; pulse 144, scarcely perceptible; abdomen distended; elastic resistance to 1½ in. from navel; lower abdomen and left flank dull; cervix nearly in contact with pubes; elastic resistance in situation of Douglas's pouch rising to within 1½ in. of navel; very tender; dull on percussion	Mass gradually shrank to the size of a large fist on May 31; June 24 mass markedly elastic = 7 mo. fœtal head	June 26 abdominal section; mass of clot, mostly dark and soft, quite shut off from abdominal cavity; no fœtus or placenta seen	Discharged July 17 (61 days)	The diminution of the mass proceeded to a certain point with hardening, then came softening and slight enlargement; this, taken together with former dulness in the left flank, raised a doubt as to the isolation of the bleeding; in this doubt as to fresh bleeding abdominal section was preferred to vaginal section; seen May 1, 1902; menstruation somewhat infrequent (*e.g.* 3 mo.); pelvis natural

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
69	July 5, 1901	Rose Brook	31	Housewife	Preg. 0	Marr. 13 yrs.	Last period ended April 5; June 19 sudden violent pain in lower abd. with vomiting; for last 7 days pain chiefly in right iliac fossa; since admission has had retention of urine; difficult micturition 14 days
70	July 27, 1901	Amy Jones	33	Housewife	Preg. 1; ch. 1—7 yrs. ago	Marr. 13 yrs.	Confinement followed by cold shivers; in bed 6 weeks; last menstruation March 6-8; lost blood June 16 to July 15; violent abd. pain June 16; slight loss July 29
71	Oct. 7, 1901	Mary Anne Burns	27	Machinist	Preg. 3; ch. 2—last, Sept. 18, 1900; misc. 1, Sept. 20, 1902, at 4 mo	Marr. 7 yrs.	Amenorrhœa June 1-Sept. 20; free and clotted loss Sept. 20-Oct. 2; Sept. 20 'miscarried' and vomited; 12 days later shooting pain in right iliac fossa, lasting till admission
72	Nov. 21, 1901	Emma Sanderson	28	Housewife	Preg. 1; ch. 1—4 yrs. ago	Marr. 5 yrs.	Last regular period in August at proper time; in Sept. and Oct. a slight show; about Nov. 1 severe pain in lower abdomen, with retention of urine and free bleeding; Nov. 1 for one day only

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
10½ wks.	Some anæmia; flattened mass, 4 in. horizontally by 1½ in. vertically, in left posterior quarter of pelvis, pushing uterus forwards and to right	—	Abdominal section July 10; left tube ruptured into peritoneal cavity; firm clot in Douglas's pouch; no placenta or fœtus seen	Discharged July 28 (24 days)	Operation indicated by symptoms of progressive bleeding, especially retention of urine
14 wks. and 2 days (100 days)	Breasts passive; no anæmia; fixed, tender, elastic swelling in left posterior quarter of pelvis 2 in. by 2 in. (horizontal) by ¼ in. (vertical)	The elastic swelling increased to the size of an egg	Aug. 2 opened by vagina; old blood; no placenta or fœtus seen	Discharged Aug. 13 (17 days)	Probably tubal gestation from long duration of amenorrhœa
16 wks. (113 days)	A mass in left posterior quarter of pelvis = egg; uterus pushed forwards and fixed; some additional hardness, continuous with this, at pelvic brim	Oct. 15 induration almost gone; Nov. 1 cervix tethered to left side of pelvis; in right posterior quarter is a rounded induration, slightly displaceable = golf-ball; Dec. 13 cervix tethered to left side, but all induration gone	None	Nov. 2 (27 days)	Probably tubal, on account of long duration of amenorrhœa; another history of alleged 'miscarriage;' seen May 1, 1902; some tenderness in pelvis, but no induration
About 3 mo.	Looks ill; conjunctivæ yellow; tongue dry; temp. 100°; pulse 100; clear secretion in both breasts; elastic tumour = fœtal head, in pelvis, pushing uterus downwards and forwards, reaching above brim in right iliac fossa, in front of rectum; cervix not soft	Bowels acted satisfactorily for the last time on Nov. 26; Dec. 1 vomiting; Dec. 2 abdomen greatly distended, shiny; vomiting continued; intestinal obstruction	Dec. 2 opened *per vaginam;* much broken down clot; no fœtus or placenta found; as soon as tension was relieved flatus and fæces escaped plentifully from anus; the clotted blood = 28 oz.; no fresh blood seen; Dec. 16 no mass remained in pelvis; uterus fixed in front of left sacro-iliac joint; recovery uninterrupted	Discharged Dec. 23 (33 days)	Intestinal obstruction is a very rare result of hæmatocele; retention of urine is also quite uncommon, though less so; before operation the condition appeared to be one of hæmatocele gradually increasing, without causing anæmia, but causing evident intestinal obstruction; the question of abd. section was debated, but it was decided to proceed *per vaginam*, reserving abd. section in case of fresh hæmorrhage during operation; the great distension of the bowels seemed very unfavourable for abd. section, and the result proved, as was expected, that the intestinal obstruction was mechanical, and not reflex, the bowels spontaneously evacuating themselves as soon as the pressure was relieved; seen May 1, 1902; menstruation regular

Number.	Date of Admission.	Name.	Age.	Occupation.	Pregnancies.	Civil State.	History of Present Condition.
73	Dec. 5, 1901	Ellen Wilson	21	Housewife	Preg. 2; ch. 1—Nov., 1900; free bleeding followed; Dec. 5 flooded; operation in Guy's Hospital; misc. 1—end of June, 1901, at 2½ mo.; bled slightly for a month	Marr. 2 yrs.	Last period ended Oct. 5; about time of next period sudden pain in right iliac fossa, lasting 6 hours, vomited; a week later a similar attack; since then two more attacks—last Dec. 5; since first attack constant brown discharge; coughing, micturition, and defæcation painful; admitted for pain
74	Dec. 11, 1901	Catherine Herrick	35	Housewife	Preg. 2; ch. 1—1 yr., 10 mo.; misc. 1—5 yrs. ago (doubtful); suckled child 9 mo.; weaned 13 mo. ago	Marr. 6 yrs.	Last 3 periods: Oct. 11-13 (less than usual), Nov. 6-9 (normal), and Dec. 3-5; Nov. 10 felt ill, pains in abdomen, difficult and painful micturition; from Nov. 16 pain continuous; Dec. 6 vomiting, pain worse; since admission catheter necessary
75	Jan. 15, 1902	Mary Ann Logan	27	Housewife	Preg. 2; ch. 2—last, Nov., 1896	Marr. 9 yrs.	Last period end of September; Nov. 19 pain in bottom of back after a day's washing; Nov. 24 very severe pain in sacrum and lower abdomen, vomited and felt cold, then began to bleed, and has passed blood and clots till admission

Time of Onset of Symptoms since Last Menstruation.	Physical Examination on Admission.	Progress of Case.	Surgical Operation.	Result; Date of Discharge.	Remarks.
About 1 mo (?)	Pale, anæmic, but not profoundly; elastic mass = child's head, in Douglas's pouch, reaching to navel on the right side; uterus pushed downwards and forwards against pubes, very tender; milk in both breasts	Jan. 6 lump=a large fist; milk in both breasts	Jan. 8 opened by vagina; 10 oz. of black clot in a membrane, so definite as to be thought to be the tube, but afterwards proved to be only fibrin; in it an embryo=a pea, with a cord	Discharged Feb. 5 (68 days)	Opened on account of slow absorption during one month; proved to be a gestation; seen May 7, 1902; no pain; quite well
Menstruation apparently regular; one apparently normal period since onset	Not anæmic; much milk in both breasts mass = large fist in left posterior quarter of pelvis, very tender, fixed, above bowel; uterus pushed against pubes; cervix not soft	Dec. 12 severe attack of pain; Dec. 20 pain after food in both lumbar regions, considerable; again Dec. 21; Jan. 6, 1902, a little induration of no appreciable thickness in Douglas's pouch, otherwise the induration has disappeared; cervix central in pelvis, fixed; there has been no escape of pus, blood, or other fluid	None	Discharged Jan. 10, 1902 (31 days)	The history as regards menstruation obscure; the severe attacks of pain were not accompanied by increase of the pelvic swelling or signs of bleeding; the rapid absorption of the mass points strongly to blood; letter received April 30, 1902, patient 'has enjoyed the best of health'
About 8 wks.	No anæmia; slight watery secretion from left nipple; mass = fist in right posterior quarter of pelvis, high up, elastic; uterus in front and to left	Feb. 21 all absorbed except a firm mass = large walnut, in right posterior quarter of pelvis	None	Discharged Feb. 22 (39 days)	Amenorrhœa 8 wks.; formation of a tumour the size of a fist, with pain and bleeding from uterus, rapid absorption, all point to blood; letter received May 1, 1902, 'better with the complaint that I entered hospital'; seen May 16, 1902; mass entirely disappeared

Analysis of Cases.

The fatal cases were Nos. 7, 17, 22, 23, 49, 51,67=7, or 9·3 per cent.

Cases left alone and recovered: Nos. 1, 3, 8, 10, 20, 21, 24, 25, 26, 27, 28, 30, 32, 35, 36, 37, 38, 39, 40, 41, 43, 45, 47, 50, 54, 56, 60, 61, 62, 63, 65, 71, 74, 75=34=45·3 per cent.

Vaginal sections: Nos. 2, 9, 13, 16, 18, 33, 46, 52, 53, 55, 57, 58, 70, 72, 73=15=20 per cent.

Cases left alone throughout, added to those afterwards treated by vaginal section: 34+15=49=65·3 per cent.

Abdominal sections (primary—i.e., operated on immediately): Nos. 11, 12, 14, 15, 22,* 42, 49,* 66, 69=9=12 per cent.

Abdominal sections (secondary—i.e., not operated on immediately): Nos. 4, 5, 6, 7,* 17,* 19, 23,* 29, 31, 34, 44, 48, 51,* 59, 64, 67,* 68=17=22·6 per cent.

Abdominal sections, primary and secondary: 9+17=26, or 34·9 per cent.

Cases in which abdominal section was not done: 49=65·3 per cent.

Mortality of the whole series of 75 cases=7, or 9·3 per cent.

Mortality of vaginal sections: 0.

Mortality of all abdominal sections: 7 out of 26=26·92 per cent.

Mortality of primary abdominal sections: 2 out of 9=22·2 per cent.

Mortality of secondary abdominal sections: 5 out of 17=29·41 per cent.

Mortality of all abdominal sections out of the whole number of cases: 7 out of 75=9·3 per cent.

Mortality of primary abdominal sections added to those left alone: 2 out of 43=4·65 per cent.

Mortality of secondary abdominal sections added to those left alone: 5 out of 51=9·8 per cent.

Opened per vaginam under mistaken diagnosis: Nos. 2, 7 (died after secondary abdominal section), 16, 46=4.

Cases possibly prejudiced by delay in operating: Nos. 7,* 17,* 23,* 51* (to the best of my recollection, change in patient not reported to me till too late), 67* (not seen by me till *in extremis*).

Cases in which abdominal section was probably superfluous: Nos. 13, 15.

Cases of large tumours rapidly absorbed (i.e., larger than cricket-ball): Nos. 21 (=fist), 25 (child's head), 26 (up to navel), 30 (fœtal head), 35 (large child's head), 37 (fist), 39 (small fœtal head), 47 (up

* N.B.: fatal cases marked *.

to navel), 60 (child's head), 65 (large child's head), 74 (large fist), 75 (fist).

Cases in which the tumour increased after admission, and which recovered without operation: Nos. 3, 30, 39.

Attacks of pain without increase of tumour: Nos. 20, 32, 62, 74.

Hæmatocele discharged per rectum: Nos. 47, 50.

N.B.—Rises of temperature do *not* necessarily indicate infection of the sac.

A few of the above require some comment; most of them speak for themselves in the notes.

Vaginal Sections.—In nearly all cases the purpose of these was to remove a collection of blood which was considered too large to admit of the safe discharge of the patient, and which was therefore removed and drained.

I have for some time ceased to use mere puncture. It is not always easy to open the sac by this means; and it is always possible, where the mass is small, to run a sharp trochar through both walls of the enclosure, though this has never happened to me. I now cut through the vaginal wall, stopping any bleeding before proceeding farther, and opening the cyst with fingers, aided with some blunt instrument, such as a clip. With the guidance of the other hand on the abdomen, it is generally easy to go far enough without going too far. I generally drain with gauze after washing out the sac.

Case 2 was opened for retention of urine, the sac being taken for a pelvic abscess from the history of rigors. The patient recovered.

Case 9 was opened at once. According to subsequent practice, it would have been watched for a time before this was done. The patient rapidly recovered.

Case 13.—The same remarks apply to this.

Case 16.—This was opened as a pelvic abscess.

Case 18.—The same as Case 9.

Case 33.—This was operated on because it burst under manipulation.

Case 46.—The same as Cases 9 and 18.

Case 52.—Operated on on account of persistence of symptoms and signs.

Case 53.—The same as Cases 9, 18, 46.

Case 55.—Indication for operation—severe pain after admission. This was a remarkable case (see notes).

Case 57.—Indication for operation—slight increase of tumour and the addition of elasticity.

Case 58.—Indication for operation—large, partly-elastic mass.

Case 70.—Indication for operation—slight increase of tumour five to six weeks after admission.

Case 72.—Indication for operation—obstruction of bowels. A remarkable case (see notes).

Case 73.—Indication for operation—slow shrinking of tumour.

It will be seen that in 4 cases—namely, Cases 2 (retention of urine), 33 (cyst bursting under manipulation), 55 (severe pain after admission), 72 (obstruction of bowels)—there was some distinct indication necessitating operation; whereas in the others the chief object was to expedite the disappearance of the effusion, and that in such cases the patient would almost certainly have recovered without operation. The figures concerned will be found in the table, in which the vaginal sections were added to the number of those left alone. But if those 4 cases in which operation was absolutely required are deducted, there remain 45 cases instead of 49 of which it may be said that they would almost certainly have recovered without operation—a percentage of 60 instead of 65·3.

Abdominal Sections (*primary—i.e., operated on immediately*).—These require no special comment; the indications are given in the notes. Two of them—Nos. 13 and 15—would probably not have been submitted to operation later in the series.

The abdominal sections were nearly all performed by Mr. Harrison Cripps, a few by Mr. Bruce Clarke.

Percentages of mortality in an affection of which the natural history is so little known are worth very little. Still, these cases show that abdominal section for extra-uterine gestation is attended by a considerable mortality.

If all cases had been operated on according to ideas prevalent, and based on the assumption that without operation they would nearly all die, the percentage of successful abdominal sections would, of course, have been better, but the percentages of recovery in the series probably worse.

Abdominal Sections (*secondary—i.e., not operated on immediately*).—As regards the other class, in which abdominal section was done after an interval, it is only necessary to review the fatal cases, to see whether the result in any of them can be attributed to delay.

In *Case* 7 the diagnosis was erroneous, too much stress having been laid (as it turned out) on the history of rigors and profuse sweats, leading to the opinion that pus was present. The cyst was punctured, collapse followed in about an hour, abdominal section was at once performed, and the patient died. Here it is probable that, if a vaginal section had been done, bleeding would at once have

been detected, and the patient saved. But this is doubtful in view of the considerable mortality of abdominal sections, even if done immediately.

Case 17.—Here the cause of death was peritonitis, proving fatal on the third day. The indication was sudden collapse on the day of admission, a rupture having taken place into the peritoneal cavity.

Case 23.—A case of rupture into the peritoneal cavity after admission. Death from shock; patient very anæmic on admission.

Case 51.—This case should have been operated on earlier, and the rules laid down by me for such cases were not (to the best of my recollection) followed.

Case 67.—Not seen by me till *in extremis*, two days after admission.

If Case 7 (wrong diagnosis) and Cases 51 and 67 be deducted, as avoidable on the rules laid down, only two fatal cases remain in this class.

It is much to be wished that some means could be devised by which it might be known beforehand with certainty what cases are liable to secondary rupture; but, as we cannot yet determine this by physical examination and history, I am by no means prepared to admit that expectant treatment, if carefully carried out, increases the mortality; my experience, indeed, is directly to the contrary.

Supposing *all* the cases had been operated on by abdominal section, and there had been no deaths among those who (as a matter of fact) were not in this series subject to operation, we should have had a mortality of 7 out of 75, or 9·3 per cent. (see table, 'Mortality of all abdominal sections out of whole number of cases.')

Putting aside the cases in which abdominal section was delayed, and taking only those cases in which it was performed at once, adding these to the cases left alone (who might, for the sake of argument, have all recovered if they had been operated on), we get a mortality of 2 out of 43, or 4·65 per cent. (see table, 'Mortality of primary abdominal sections added to those left alone.')

It will be seen from the table that in 12 cases large tumours (*i.e.*, larger than a cricket-ball) were absorbed.

Also that in 3 cases there was marked increase of the tumour *after admission*, but with recovery without operation.

Also that in 3 cases with marked attacks of pain (which seemed to indicate fresh bleeding) there was no increase of the tumour.

In 2 cases the hæmatoceles discharged by the rectum. This is sometimes said to be a dangerous route for evacuation, but in *early* cases it seems to entail no great risk. The matter is, of course,

different in cases of later pregnancy, with definite fœtal bones and a non-collapsible sac. In such cases the sac is apt to become dangerous from the entrance of fæcal contents.

In the following cases there was a HISTORY OF REPEATED ATTACKS BEFORE ADMISSION, FOLLOWED BY RAPID ABSORPTION AFTER ADMISSION.

Case 8.—There was pain and bleeding for three weeks before admission; on admission there was a mass the size of a three-months pregnancy; fourteen days later this was practically absorbed.

Case 10.—Repeated loss of blood before admission, a mass the size of a small orange on admission; a month after admission this was much smaller and hard.

Case 20.—Symptoms of weight October 24; October 29, bleeding; October 31, much clotted blood; November 14, abdominal pain; on admission, December 3, a mass rising to the pelvic brim; on January 20 all induration was absorbed.

Case 21.—Bleeding from end of October to end of November; again from the end of November to first week in December, again for eight days at the end of December, then a clear interval of nine days, and loss of blood till admission, February 4; on admission a mass the size of a fist; by February 19 this had been absorbed.

Case 24.—After five weeks' amenorrhœa a bright red discharge with clots; this lasted till three weeks before admission, and was replaced by severe pain; on admission a mass filled the pelvis; ten days after admission this was practically absorbed.

Case 26.—Three months before admission lost blood for six weeks; then, after a clear interval of six weeks, lost blood again for six weeks; a fortnight before admission sudden onset of pain; on admission an obscurely elastic mass rising to the navel; three weeks after admission the size of this mass, with the uterus, was that of an orange.

Case 37.—Bleeding from October 11 till admission, November 19; slight pain till October 30; on October 30 severe labour-like pain (progressive attacks); on admission a mass the size of a fist; on December 5 the mass had shrunk to the size of an orange.

Case 43.—Loss of blood April 28 to May 9; again May 12 to 28; April 30, pain till admission, May 24; on admission an elastic mass the size of a cricket-ball; by July 10 the mass had got much smaller.

Case 54.—May 7, violent pain; May 11, another attack, with bleeding; on admission a mass the size of a cricket-ball; on July 23 this had shrunk to the size of an egg.

Case 69.—About October 15, bleeding; fourteen days later bleeding recurred; about November 12, fainted and fell, abdomen swelled, and bleeding recurred; on admission, December 7, an elastic mass the size of an orange; January 11 this had shrunk, and it continued to shrink after discharge from hospital on January 14.

Case 65.—February 20, violent labour-like pains, red discharge, lasting fourteen days; March 7 to 12, flooded; on admission, March 28, a mass the size of a large child's head; on April 10 the mass, with the uterus, was the size of an orange.

Case 75.—November 19, pain in the bottom of the back; November 24, very severe pain in sacrum and lower abdomen; on admission, January 15, a mass the size of a fist; by February 21 all was absorbed except a firm mass the size of a walnut.

The above cases show that repeated attacks do not necessarily involve serious consequences. No doubt absolute rest in bed in a hospital is a very different thing from what is called 'laying up' at home. The above, as before stated, do not include cases in which any operation was done. These are found in their proper places.

How Long after the Symptoms of the First Hæmorrhage are we safe from Secondary Bleeding?

In Case 1 the first symptoms occurred on May 2; this was followed by daily paroxysms of pain till admission on May 26, with a mass the size of a fœtal head; yet all was practically absorbed by the fifty-third day after admission (seventy-four days after the first seizure).

In Case 3 there were repeated attacks of severe pain for six days; twelve days after the onset there was retention of urine, slight temporary increase of the mass twenty-seven days after the onset. The mass, which filled the pelvis and reached 4 inches above the pubes, gradually consolidated.

In Case 30 a mass the size of a small egg on admission, December 16, increased on December 22 to that of an orange, on December 27 to that of a fœtal head; from this time it rapidly shrank.

In Case 39 the first symptom (sudden pain) was on December 26; another attack on January 11. On admission, January 11, there was a mass the size of the yolk of an egg. On February 2 the mass (with the uterus) was the size of a small fœtal head; from this time it rapidly shrank.

Only those cases in which an increase in size was noted after admission are noted above. Cases in which increase in size led to any operation are noted in their proper places.

Summary.

We have now ended the analysis of the cases, and it remains to summarize the results. It is not contended that all the 75 cases were undoubted cases of tubal gestation, but (with such deductions as individuals may choose to make from their own diagnosis of the cases on the evidence furnished in the notes) it may be said that all such as were not proved by operation or by their natural terminations (such as by discharge of blood by the bowel, with disappearance of the tumour) to be tubal gestations or hæmatoceles *would by most observers have been diagnosed as tubal gestations.*

For the last twenty years, if we except the recent tendency to something like expectant treatment in some cases, the diagnosis of tubal gestation has been considered to indicate abdominal section.

In the series of 75 cases just detailed, no less than 34 were left alone and recovered, a proportion of 45·3 per cent., and to these should be added those in which the cyst was evacuated by vaginal section, in order to get rid of that tumour before the patient was discharged. These cases numbered 11, and, added to the 34 which were left alone throughout and recovered, reach a total of 45 cases, or 60 per cent. of the whole number.

Ruptured tubal gestation (including tubal mole, etc.) must always, in the nature of things, be a very dangerous affection. In some cases immediate operation is, doubtless, the only chance of saving life, while others, which do not indicate immediate operation, may subsequently require it.

As in all other departments of practice, in order to get the best percentages of results from operation, the best course will be to operate on all cases; but this would include, according to our series, 65·3 per cent. of unnecessary abdominal sections. Where only necessary operations are done, there will be a preponderance of bad cases, and the percentage of recoveries will be less. The question whether, in any given case, expectant treatment is the safer must depend upon various considerations. Distance, for example, comes in. If the patient is not, and cannot be, fairly accessible, it may be safer, in any individual case, to do abdominal section than to watch the patient. If there have been repeated attacks, the presumption is

that there may be others. In this connection, however, we have to remember that many such cases recover without operation.

The only way to arrive at a trustworthy rule to guide us is by the collection and publication of series of cases under one observer, and not compiled from the practice of many, for by this means only can any uniformity, such as is necessary, be obtained.

It is not unusual in my wards to have three or four cases of the class which we have been considering recovering without operation at the same time, and this, in contrast to the usual practice, is in itself a striking sight.

We have learnt much of the diagnosis and pathology of the affection from abundant operations, but in the future we shall be bound to consider what, in any individual case, seems to be the safest course for the patient. Errors in judgment may happen, and at present our means of prognosis in these cases are far from complete, but it must be remembered that abdominal section for ruptured tubal gestation is in itself a perilous proceeding.

A CASE OF PRIMARY TUBERCULOSIS OF THE CERVIX SIMULATING CANCER, AND TREATED BY VAGINAL HYSTERECTOMY.*

By ARTHUR H. N. LEWERS, M.D. Lond., F.R.C.P. Lond.,
Obstetric Physician to the London Hospital.

Mrs. S. T., aged thirty-six, a housekeeper, was sent to see me by Dr. Haslip on January 21, 1896. She had been married eight years, but had never been pregnant. She had suffered from a white vaginal discharge for years, even before her marriage. During the last nine months, however, bleeding had been noticed between the periods. The discharge had been slightly offensive. The first time the irregular bleeding occurred was after coitus, nine months ago. In the blood-stained intermenstrual discharge, she had noticed pieces of 'skin' from time to time, especially after the menstrual periods. For the last three months she had used a syringe for the vagina. Passing the pipe had on two occasions brought on bleeding. She had had pain in the left iliac region for five months, and also a dull feeling round the lower part of her body. The pain, however, did not seem to have been at all severe, and it had been constant for only one week. The catamenia had been regular every calendar month, lasting three to four days, and attended with very little pain. The amount lost had, if anything, been recently less than usual.

Three years ago she had bronchitis and influenza badly, and bronchitis again last year (1895). Before she was married she had suffered from gastric ulcer and hæmatemesis. But as a rule she had enjoyed good health until about the last twelve months, when she began to get weak and disinclined for exertion, and to suffer from the local symptoms already mentioned. She had not definitely lost flesh. As regards the family history, one of her aunts died of consumption —the only case she knew of in the family.

Examination, January 21, 1896.—Nothing abnormal was detected in the abdomen. On vaginal examination the external os was distinctly more patulous than usual, and a soft friable growth was felt in the cervical canal as far as the finger could reach. The growth bled very freely on touching it. Through the speculum the growth was seen to be slightly raised, and most of it was on the anterior lip and to the left, though there was some all round the

* Read before the Obstetrical Society of London, April 2, 1902.

os. Bimanually the uterus seemed to be of normal size, and freely movable.

From the signs and symptoms above mentioned I had no doubt at the time that the case was one of malignant disease of the cervix, and I advised the patient to have the uterus removed. Accordingly, she was admitted into the London Hospital under my care on January 24, 1896.

On January 27 the patient was anæsthetized, and a careful examination made. The result confirmed what had been found at the previous examination. The whole appearance was, as far as

FIG. 1.—UTERUS LAID OPEN, SHOWING CONDITION OF CERVIX.

I could judge, identical with that met with in many cases of cancer of the cervix. The supposed growth broke down very readily when pressed on with the sound. The case seemed to be one of cancer of the cervix, suitable for vaginal hysterectomy.

Operation, January 30, 1896.—The uterus was removed by vaginal hysterectomy. The cut margins of the vaginal walls were freely seared with Paquelin's cautery. Pressure forceps were used to secure the vessels in the broad ligaments, and were left on. An iodoform gauze drain was passed between the forceps so as to project about an inch into Douglas's pouch. The forceps were all removed at the end of the third day, and the subsequent progress of the case was uneventful.

On February 20 an examination was made. There was a healthy-looking granulating wound, about half an inch in

diameter, at the top of the vagina. The patient went home on February 22.

I have seen and examined her three times since the operation. The scar at the top of the vagina was on each occasion quite healthy, and the patient was in good health. I wrote to her recently to inquire how she was, and she replied in a letter, dated November 20, 1901, that 'she enjoys fairly good health, and has had no return of the bleeding.' She occasionally has bronchitis and slight 'congestion.'

Description of the Uterus (after nearly six years in spirit).—Its extreme length is $3\frac{1}{8}$ inches. Three pieces have been cut off for microscopic examination, and sent to the Clinical Research Association. Two from the cervix were reported on by Mr. Targett as showing tubercle. One piece from the fundus showed nothing abnormal. Before the uterus was laid open the external os was more patulous than normal. Round it were seen a series of papillary projections, which extended some way up the cervical canal. The largest was close to the internal os (Fig. 1).

Two drawings of the sections were made, under Mr. Targett's supervision, by the Clinical Research Association, and his description of them is as follows:

'Fig. 2 represents a portion of the mucous membrane of the cervix uteri thrown into ridges, and thickened by inflammatory growth. In one of these ridges is embedded a group of gray tubercles, with large well-formed giant-cell systems.

'In Fig. 3 the top of this ridge of mucous membrane is represented with its columnar epithelium and cellular tissue. Three large polynuclear giant-cells are represented.'

Remarks.—Cullen in his valuable work on cancer of the uterus mentions cases of tuberculosis of the cervix. He says: 'This rare condition (tuberculous ulceration of the cervix) clinically might readily be mistaken for squamous-celled carcinoma of the cervix.' He refers to a few cases. In one there were condylomata and tuberculosis of the cervix. The cervix was amputated, vaginal hysterectomy being found impossible. The patient died about a month after the operation, apparently of tuberculosis of the lungs. At the autopsy general tuberculosis of almost all the organs was found. As regards the physical signs in this case, on examination there were polypoid masses on the cervix and vaginal vault, not showing any tendency to bleed on examination. The patient was a coloured woman aged seventeen.*

* Cullen, 'Cancer of the Uterus,' 1900, p. 194.

FIG. 2.—LOW POWER. SECTION THROUGH RIDGE OF MUCOUS MEMBRANE.

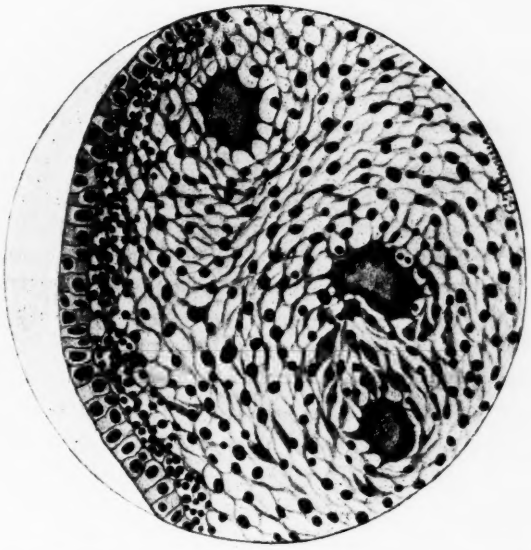

FIG. 3.—HIGH POWER. MUCOUS MEMBRANE SHOWING GIANT-CELL SYSTEMS.

In another case mentioned by Cullen the patient died of general tuberculosis; there was tuberculosis of the uterus, tubes and ovaries. There was no evidence that it was primary in the uterus.*

Cullen also refers to a case reported by E. Kaufmann, in which tuberculosis of the cervix was discovered at an autopsy on a patient aged seventy-nine. There was no general tuberculosis in this case.†

He does not, as far as I have seen, refer to any case in which the disease was primary in and limited to the cervix, and in which the condition led to an examination during life.

In my case the 'growth' on the cervix bled very readily on examination, and was also friable. In fact, it was not till after the uterus had been removed, and the tissue examined with the microscope, that I entertained the slightest doubt that the case was one of cancer of the cervix. I suppose there can be little doubt that, given a case of primary tuberculosis of the cervix, where there is reason to believe there is no tubercle elsewhere, vaginal hysterectomy is the right treatment. In my case, however, I have to admit, if that be so, the right treatment was adopted on a wrong diagnosis.

I may mention that it was not till four years after the operation that a portion of the cervix was sent to the Clinical Research Association for examination, so certain had I felt that the case was an ordinary one of cancer of the cervix. In the year 1900 I was writing a paper‡ on the after-histories in forty cases of vaginal hysterectomy performed for cancer of the uterus. This case was one of that series. I obtained reports from the Clinical Research Association on portions of the cervix or body of the uterus, in each of the cases in which the disease was known not to have recurred. When I sent a portion of the cervix in the case that forms the subject of this paper, I fully expected to get back a report that the tissue showed cancer. Instead of this, however, Mr. Targett reported that the tissue showed the presence of tubercle, and asked for another piece of the cervix to examine. This was sent, and the report came back that this portion, like the first, showed the presence of tubercle.

Recently (December, 1901) I sent the first section of the cervix prepared and drawn by the Clinical Research Association to Dr. Bulloch, Bacteriologist and Lecturer on Bacteriology and Genera Pathology to the London Hospital. He reported on it as follows: 'I beg to report that I have examined one stained section of a growth said to have been removed from the uterus by Dr. Lewers.

* Cullen, *loc. cit.*, p. 193. † *Ibid.*, p. 346.
‡ *Trans. Royal Med. and Chir. Soc.*, vol. lxxxiv. (1901).

The section was evidently a transverse one through the mucosa of the uterus, and contained an abnormal tissue. The epithelium of the mucous membrane was denuded so as to expose the cytogenic tissue, in which parts of the uterine glands could still be detected, and they did not appear to be abnormal. Lying, however, in the cytogenic tissue were several nodules, which presented the classical appearances of a tubercular giant-cell system. The giant-cells were polygonal and contained many nuclei, the main part of the nodule being composed of epithelioid cells in a state of vacuolar degeneration. In the absence of the positive proof of the existence of *Bacillus tuberculosis* in the nodules, an exact diagnosis is impossible. There can, however, be no doubt that the lesion is of a chronic granulomatous type, most probably tubercular.'

Dr. Bulloch asked me for a portion of the cervix that he might make sections for himself, and this, making the fourth piece cut off for microscopic examination, was sent to him. His report on this piece is as follows: 'I have nothing further to add to the report I have already sent you, with the exception of the fact that, although the structure was tubercular, no tubercle bacilli could be found in six specimens stained specially to show them.'

Pozzi,* at the beginning of his chapter on 'Tuberculosis of the Generative Organs,' says: 'Invasion of the generative apparatus by the tubercle bacillus is somewhat rare. Certain regions, *e.g.*, the vagina and the cervix, appear to be very refractory to it, no doubt on account of the resistance of the stratified epithelium that protects them. It is the tubes that are generally the starting-point of tubercular lesions. From the tubes the disease readily passes to the ovaries, and more rarely it descends down into the uterus itself.' He also says, 'Cases of tubercular disease limited to the cervix are not numerous,' and refers to two cases, one by A. Laboulbène, and another described by Cornil. The latter case was one in which the clinical signs suggested malignant disease, and on the assumption that the case was one of cancer Péan removed the uterus. Examination of the uterus afterwards proved that the morbid process was tubercular. Cornil was not, however, able to find any bacilli. The case recorded in this paper is therefore very similar to that of Cornil. In both cases the condition present was believed to be cancer, and in both, on this mistaken diagnosis, hysterectomy was performed. Although the structure was characteristically tubercular, tubercle bacilli could not be found in either.

* 'Treatise on Gynæcology,' vol. iii., p. 128. The New Sydenham Society, 1893.

There is an exhaustive paper on 'Tuberculosis of the Female Generative Organs,' by Dr. J. Whitridge Williams, in the *Johns Hopkins Hospital Reports* (vol. iii., 1892, p. 85). The references to the literature are there very fully given, as will be evident from the fact that they are 133 in number. Though, however, there is this large mass of literature on tuberculosis of the female generative organs, there is very little of it concerned with primary tuberculosis of the cervix. It is interesting to observe that, when tuberculosis affects the body of the uterus, it very rarely involves the cervix, and also that when it involves the cervix, the body of the uterus is very rarely affected, whilst in most of the latter cases tuberculosis of the vagina has been present as well. In other cases tuberculosis of the cervix has been the sole manifestation of the disease in the genital tract in women the subjects of phthisis. Lastly, the cervix may be the only part of the whole body affected by tubercle. Apparently Cornil and Péan's case is the only one observed and recognised during the life of the patient; though even there, as in my case, the uterus was removed on a mistaken diagnosis of cancer. There is also a case of Zweifel's in which a similarly wrong diagnosis was rectified by examining a portion of the cervix with the microscope before operating. Whitridge Williams has no doubt that 'tubercular ulcerations of the cervix have not unfrequently been operated upon on the supposition that they were of carcinomatous origin.'

There is a case by Zweigbaum, of Warsaw, reported in the *British Medical Journal* (vol. i., 1889 p. 93), which is interesting as bearing on treatment. In that case the vaginal portion of the cervix was affected. He apparently cured the local mischief in three weeks by the application of the cautery. The patient, however, died five months later of general tuberculosis, and there was recurrence of tubercular ulceration in the vagina. As this patient died of general tuberculosis comparatively soon after the vaginal portion was found affected with tubercle, it does not seem quite clear that the cervix was the only part affected when the case first came under observation.

The fact that tuberculosis of the cervix may easily be mistaken for cancer may perhaps throw some light on those few—very few—cases of so-called cancer of the cervix which have recovered spontaneously without operation; for it appears not very improbable that a patient with tuberculosis limited to the cervix might occasionally recover spontaneously.

A CASE OF TUBERCULAR PAPILLARY DISEASE OF THE CERVIX UTERI.

By E. OCTAVIUS CROFT, M.D.,

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THE specimens from this case, including the uterus removed by vaginal hysterectomy and microscopical sections of the growth, were exhibited at the meeting of the Obstetrical Society of London on April 2, 1902.

The patient, Mrs. L., a young woman aged twenty-six, was delicate from infancy until about seven years of age, and then had good health in all respects until puberty. Menstruation commenced at fifteen years and was always scanty, and recurred at periods always longer than one month. There was generally some intermenstrual leucorrhœa.

The family history is interesting. The husband is a perfectly healthy man, and has never had any illness in his life, and never had any occasion to consult a doctor. The husband's family history is also good. The mother of the patient, however, when young suffered from abscesses in various parts of her limbs, the scars of which she carries now. The mother's brother died of consumption when twenty-six years old, and several relations on the maternal grandfather's side also died of consumption. The mother had eleven children. Seven of them are living, but some of these are delicate, and one had threatened phthisis. Of the four who died, one died of some wasting disease at nine months, and another of brain trouble and convulsions, probably tubercular meningitis.

The patient married about two and a half years ago, and the menstrual periods continued in the same infrequent manner until February, 1901, when the last normal period took place. The abdomen becoming rather larger, and the amenorrhœa continuing, she supposed herself to be pregnant, and expected her confinement in October last. The confinement not taking place, medical advice was sought, and it was ascertained that there was no pregnancy, but that some disease of the cervix existed. Dr. E. Lee of Dewsbury then saw the patient, and on examination found the cervix enlarged and softened, and upon it was a readily-bleeding growth. The characters of the growth being unusual, Dr. Lee brought the patient to me, and we examined her together on January 14, 1902. The abdominal

enlargement proved to be due entirely to subcutaneous fat, and flabbiness of the abdominal muscles. There was no evidence of any fluid in the peritoneum or of any swelling or tenderness in the abdomen. The uterus could not be felt above the pubes. On vaginal examination the cervix felt generally somewhat enlarged, but was not indurated; on the contrary, it was softer than usual. There was a heavy tenacious muco-purulent discharge. The portions of the cervix surrounding the os externum were raised and prominent; the surface of the diseased area on the posterior lip felt generally rough and villous, such as is usual in a bad so-called erosion. The condition of the anterior lip was, however, very different; it was elongated and somewhat everted; the raised portion felt coarsely papillary, the projections being of various sizes, some as large as a pea and having a polypoid form. Two or three of these polypoid masses became detached by the examination, which also caused free bleeding. The outer portions of the vaginal cervix adjoining the fornices were apparently healthy and covered with normal epithelium. The detached portions were preserved for examination.

The patient's temperature had been normal throughout, and the diagnosis so far was uncertain. A growth was present on the cervix, which certainly had not the characteristic features of any of the ordinary forms of malignant disease affecting this part. The possibility of it being sarcoma, especially of the botyroidal variety, or myxoma of the cervix, suggested itself to my mind.

A further examination was made under an anæsthetic. The results of the previous examination were confirmed, and also the fact that the body of the uterus was small and freely movable, and that there was no palpable disease in the appendages or elsewhere. A wedge of the cervix was excised for examination, and the papillary growths were freely scraped away, and the surface swabbed with iodized phenol.

The microscopic sections were examined by Mr. J. H. Targett, who pronounced those of the detached papillæ to be undoubtedly tuberculous. Well-marked miliary tubercles with giant-cells were evident. His further report on the excised wedge from the margin of the growth was as follows: 'This wedge of cervix is partly covered with granulation tissue, which has replaced the mucous membrane of its canal. This granulation tissue is studded with typical miliary tubercles, formed around polynuclear giant-cells. The appearances correspond with those of the detached papillæ already examined.'

The disease being apparently local, and there being no evidence

of disease in other organs, I advised vaginal hysterectomy, which was consented to. On this occasion I made a posterior incision first, in order to gain further information as to the condition of the peritoneum in Douglas's pouch, and the state of the uterine appendages and surrounding parts. There was no fluid in the peritoneum, and there were no pelvic adhesions. The ovaries and tubes were felt to be quite free, and not thickened or enlarged. The operation was then proceeded with and the uterus removed without difficulty. Doyen's clamps were used for the broad ligaments, and the vagina loosely packed with iodoform gauze. No sutures were employed. The immediate recovery was rapid and uneventful, but as the operation was only performed on February 15, 1902, the ultimate

FIG. 1.—SECTION OF A PAPILLA, COMPOSED OF GRANULATION TISSUE WITH TUBERCLES (LOW POWER).

result as to freedom from further developments of tubercular disease will have to be recorded subsequently.

The uterus removed was further examined. The cervix still showed a papillary 'erosion,' but, as it had undergone a thorough scraping at the preliminary operation, the large papillæ were absent. There was no ulceration or breaking down of the tissues. To the naked eye the walls of the cervix, and also of the body of the uterus, appeared healthy. When perfectly fresh the endometrium did not present any unusual appearances; it did not seem thickened, irregular, or roughened.

Microscopical examination of sections failed to demonstrate the presence of tubercle bacilli, but the characteristic tubercular structures

were again evident In addition to the disease of the cervix, the endometrium of the body of the uterus was, however, found to be the seat of a diffuse miliary tuberculosis, which was unsuspected from the naked-eye appearances.

Tubercle having been discovered in the endometrium, it remains an interesting point as to whether the lesion was an ascending or descending one. If descending, one would expect to have found obvious disease in the tubes. The fact that the condition in the cervix was so much more marked and advanced than that in the body of the uterus would suggest that the cervix was the primary seat of the disease. The possible mode and source of infection is

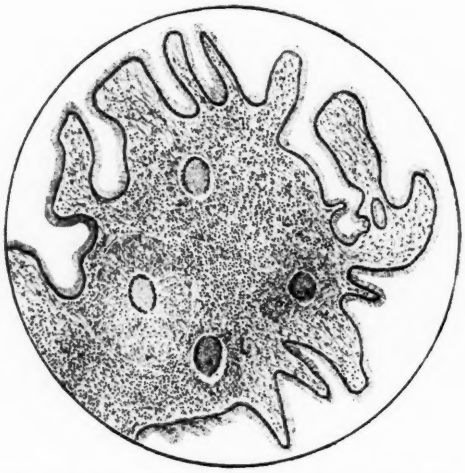

FIG. 2.—SECTION OF A FOLD OF MUCOUS MEMBRANE SHOWING GIANT CELLS. THE EPITHELIUM IS INTACT (HIGH POWER).

obscure. Conveyance of tubercle bacilli by direct inoculation by the husband is extremely improbable.

The diagnosis of such a case is difficult. There was a marked growth, which readily bled on examination, but there had been no previous bleeding; on the contrary, there had been several months' amenorrhœa. The growth itself had not the nodular, hard, friable consistence of cancer, but was softer, and broke away in soft polypoid masses. In a more advanced condition, when thickening, ulceration, and caseation take place, the resemblance to cancer, or possibly syphilis, would be much greater. In an earlier stage than in my case the appearances would doubtless be those of an ordinary villous erosion. Microscopical examination only can decide. The presence

of the tubercular structures and the absence of any evidence of malignant growths is obvious. From recorded cases, tubercle bacilli are usually only present, if at all, in small numbers, and are even then not easy of detection either in the tissues or in the discharge.

CASE OF ILEO-VAGINAL FISTULA.

Dr. W. J. Smyly, of Dublin, writes: In the May number of the Journal a very interesting case of ileo-vaginal fistula, resulting from rupture of the vagina during labour, followed by sloughing of the bowel, and successfully treated by abdominal section, resection of the injured bowel, and the restoration of its canal by lateral anastomosis, is reported by Dr. John Phillips and Mr. Burghard. In his remarks upon the case Dr. Phillips says that it is the first successful case treated in this way, he could find recorded. I wish, therefore, to call attention to a very similar one reported by myself in the *British Gynæcological Journal*, vol. vii., 1891, p. 330.

The points of similarity are these: Rupture of the vagina during labour, prolapse, and sloughing of a portion of the ileum, with consequent formation of a fæcal fistula; abdominal section, resection of the injured intestine, and restoration of its canal by lateral anastomosis, and the successful issue of the cases. I heard of my patient in December, 1901, and she was then in good health, and doing hard manual labour on her farm in the country.

A NOTE ON SALINE INJECTIONS, WITH A DESCRIPTION OF A SIMPLE INSTRUMENT FOR THEIR SUBCUTANEOUS ADMINISTRATION.

By GEORGE MAGUIRE, M.B., B.A.O. (R.U.I.).

The introduction of normal saline solution into the circulation to counteract shock, to dilute and alter the composition of the blood, or to replace its loss from hemorrhage, is a therapeutic measure of proved utility. And with its more frequent application comes a proportionate increase in the number of morbid states in which it is found to be of value. Of the three methods of injection—intravenous, subcutaneous, and rectal—the subcutaneous is the most common, and will probably always be the most favoured. For it is safer, simpler, and of less elaborate technique than the intravenous, yet equally certain and almost equally rapid; while it is more efficacious and more speedy than the rectal method.

As far as I know, there is no special instrument for the subcutaneous administration of normal saline solution. The usual means adopted is to connect an aspirator needle with some rubber tubing having a funnel inserted at the other end. It has occurred to me that the little instrument figured and described below ought to prove of service. It adds little to the weight of the obstetrical armamentarium, and takes up little space—factors of importance to the practitioner. It is readily sterilizable, and is so simple in construction as to be practically always ready for immediate use. For these reasons, and because, as is obvious, no assistance is required in manipulating it—in this differing from the apparatus for intravenous injections—the instrument ought to prove useful, especially in those awkward and dangerous cases where, without either time or opportunity to send for skilled assistance, the practitioner has singlehanded to cope with severe hemorrhage from placenta previa or uterine inertia.

The instrument is composed of a trocar and cannula (figured in the cut), with a rubber attachment. The cannula is double-channelled in its upper third. The straight arm receives the trocar (A). This, when screwed home by means of the screw (B), cannot be entirely removed from the cannula. It is retained in position, when fully drawn out, by an enlargement of its shaft

just above the pointed extremity, this enlargement filling the space of the straight arm above the bifurcation. There is, therefore, a free passage afforded to the stream through the rubber tube and bent arm, while the remaining space above the junction is so filled by the trocar shaft as to be practically a closed joint.

The length of the trocar is $5\frac{3}{8}$ inches, of the cannula $4\frac{5}{8}$ inches, the portion from bifurcation to point taking up 3 inches of this. The calibre is rather greater than that of a No. 3 English catheter. The rubber tube which is slipped over the bulb enlargement (C) when in use is 3 feet 9 inches long, with a funnel-shaped mouth. Its calibre is that of a No. 14 English catheter.

My instructions have been carried out with care by Messrs. Hockin, Wilson and Co., 186A, Tottenham Court Road, from whom the instrument can be obtained.

CRITICAL REVIEW.

THE BACTERIOLOGY OF THE UTERUS AND VAGINA DURING LABOUR AND THE PUERPERAL PERIOD.

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The study of the bacteriology of the female genital organs may be said to have commenced in March, 1879, when Pasteur succeeded in obtaining pure cultures of a coccus 'en chaînettes' (*Streptococcus pyogenes*) from the blood of a woman suffering from puerperal fever. It is true that others had worked in this field at an earlier date, but they had been hampered by a lack of adequate bacteriological methods of research, and their experiments were consequently inaccurate and inconclusive.

In 1837 Eisenmann had expressed the opinion that puerperal fever was identical with surgical septicæmia, and Sir James Simpson (1850) held a similar view. Oliver Wendell Holmes published a paper in the *New England Quarterly Journal of Medicine and Surgery* in 1843, in which he maintained that puerperal fever was a contagious disease; it was, however, left for Semmelweis (1847) to insist upon this fact and to demonstrate the importance of the disinfection of the hands of those who are responsible for the management of labours. In his inaugural thesis in 1862 Sieffermann of Strasburg suggested that the disease was due to some germ or ferment of unknown nature. Mayerhofer,[1] working in 1863-65, found germs in the lochia, but his descriptions are not clear. Rokitansky[2] (1864) discovered germs in the lochia of both febrile and non-febrile women, and he showed that by injecting the lochia of either of these classes of patients into animals he could produce abscesses. In the vaginal mucus of non-pregnant women Haussmann[3] (1870) found vibrios.

In the blood of infected women Coze[4] and Feltz (1869) discovered microbes arranged in chains, and endeavoured to cultivate them in sugar and water, but without success. Other workers, such as Recklinghausen,[5] Waldeyer,[6] and Orth,[7] confirmed these observations,

but it was Pasteur[8] (as has already been stated) who in 1879 first succeeded in isolating these organisms from the blood and lochia, by means of cultures in chicken broth. These successful culture experiments inaugurated a new era in the investigation of the bacteriology of the female genital organs. During the twenty-three years which have since elapsed, bacteriological methods of research have been continuously improved, and the number of workers has greatly increased, so that to-day our knowledge of the bacteriology of the female genital canal has been largely augmented, although many questions of much interest still remain unsettled. The literature of the subject is large, and in the present review only the more important papers can be mentioned. A short abstract of practically all the important papers, with a very complete bibliography, up to 1897, will be found in Menge and Krönig's 'Bakteriologie des Weiblichen Genitalkanales.'

Micro-Organisms concerned in the Production of Morbid Conditions during Labour and the Puerperium by Infection through the Genital Canal.

A considerable number of different parasitic organisms have been found in the uterine cavity or tissues of women who have exhibited morbid symptoms during labour and the puerperal period. Some of these are of common occurrence, whilst others are extremely rare. By far the most important of these are the ordinary cocci of suppuration, the *Streptococcus pyogenes*, the *Staphylococcus pyogenes aureus*, and the *Staphylococcus pyogenes albus*. These, either singly or in association, are responsible for most cases of puerperal infection, whether of a grave or mild type.

Another of the pus-producing cocci, the *gonococcus* of Neisser, has long been suspected of being capable of invading the uterine cavity after labour, and of setting up more or less serious and widespread disturbance. This organism, which does not grow on the ordinary culture media employed in the bacteriological laboratory, has during the past few years been cultivated from the uterine lochia by several workers, who used specially prepared culture media for the purpose. These researches have demonstrated that the older deductions from clinical observations were well grounded, and that puerperal gonorrhœal endometritis is by no means rare. The *Bacillus coli communis*, which occurs in the fæces of man and other animals, and is found very widely distributed, is known to be an important factor in the causation of such conditions as appendicitis, peritonitis,

and inflammation of the bladder, and there is no doubt that it also plays a part in the infective processes of labour and the puerperium.

A distinction has long been made between the morbid puerperal condition due to the invasion of the body by germs of a parasitic nature which are able to feed on the circulating blood and living tissues, and another morbid condition which presents many similar clinical features, but which is said to be due entirely to the absorption of chemical poisons, the products formed by purely saprophytic germs during their process of growth in such devitalized tissues as retained placenta, blood-clot, etc. The former of these conditions has been called septic infection; the latter, septic intoxication or sapræmia (Matthews Duncan). Recent bacteriological investigations suggest that this distinction does not always hold good, and that the saprophytic organisms of putrefaction may, under certain circumstances, be capable of producing not only a septic *intoxication*, but, by invading the living tissues, a septic *infection* also.

Other micro-organisms have been detected in the uterine lochia or tissues of women infected during or after child-birth, but the number of recorded cases is so few that only a passing reference to them is called for.

The diphtheria bacillus (Klebs-Löffler) has been cultivated from the membranous exudation which has occurred in the vagina, in certain cases after labour. Such cases have been recorded by Nisot,[9] Bumm,[10] Whitridge Williams,[11] Longyear,[12] and Haultain.[13] In most instances membranous exudation in the vagina is, however, probably caused by organisms other than the Klebs-Löffler bacillus, and to this, reference will again be made.

The pneumococcus (*Diplococcus pneumoniæ* of Fränkel) has been detected in certain cases by Czemetschka[14] and Schuhl,[15] and the bacillus of tetanus has been cultivated from the lochia of patients suffering from tetanus, by Heyse[16] and Rubesca.[17] Dobbin[18] records a case in which the typhoid bacillus was found in the lochia associated with the *Streptococcus pyogenes* and the *Staphylococcus pyogenes aureus*, but it is doubtful in this case whether the organism gained an entrance to the uterine cavity by way of the vagina or through the uterine wall, from the circulating blood.

Doléris and Bourges* found the *Proteus vulgaris*, associated with

* Quoted by Dobbin, *American Journal of Obstetrics*, 1898, p. 186.

the *Streptococcus pyogenes*, in a pelvic abscess, and they demonstrated by experiments on animals that a combination of these two organisms was more virulent than either organism by itself.

In cases of physometra or tympania uteri, the *Bacillus coli communis* and the *Bacillus aerogenes capsulatus* (of Welch and Nuttall) have been described by several observers.

Before dealing in greater detail with the more important varieties of puerperal infection, reference must be made to observations on the bacteriology of the uterine cavity during and after labour. Menge and Krönig, in their work, report the examination of the liquor amnii of 15 non-febrile parturient women, at periods varying from fifteen to twenty-four hours after rupture of the membranes. The fluid was removed from the uterus by means of aspiration into a sterilized catheter, every precaution being taken to avoid contamination from the vagina and cervix. In every instance the fluid was absolutely sterile. The number of cases examined is not large, but the result of the experiments suggests that under normal circumstances the liquor amnii and fœtus *in utero* are free from micro-organisms, even many hours after the rupture of the membranes. A rise of temperature during labour may, no doubt, be due to a variety of causes; and one of these causes is certainly the infection of the liquor amnii by the saprophytic organisms of putrefaction, or, more rarely, by the pyococci.

Gebhard[19] examined the surface of the newly-born child in 6 cases in which there had been fever during parturition, and in which the uterus contained gas (tympania uteri). In all 6 cases he found the *Bacillus coli communis*—four times in pure culture and twice associated with the *Streptococcus pyogenes*. The methods of Gebhard are, however, open to criticism, and his results must, we think, be accepted with caution.

Menge and Krönig[20] report observations on 21 patients who had a high temperature during labour. They examined the fluid aspirated from the uterus with every possible precaution to prevent contamination, and they also examined the fœtus immediately after its birth. These observations seem to be as reliable as it is possible for such to be. In 19 of these 21 cases of parturient women with abnormally high temperature, the uterine contents possessed a markedly offensive odour; in 2 cases there was no fœtor.

Liquor Amnii with Fœtor.—In 4 cases the *Bacillus coli communis* was found—three times in pure culture, once associated with a diplococcus, which could only be cultivated in the absence of oxygen (anaërobic). In the 15 remaining cases the ordinary culture media remained

sterile, but by means of special methods it was shown that in all of them strictly anaërobic saprophytic organisms were present. These organisms were of various sorts—cocci and bacilli—some of them producing gas during their growth.

Liquor Amnii without Fœtor.—In 1 case the *Streptococcus pyogenes* was found associated with the *Staphylococcus pyogenes aureus;* in the other the *Staphylococcus pyogenes aureus* was in pure culture. Of the above cases, 1 patient of the 4 from whose uteri the colon bacillus was obtained died three days after labour, and the blood and tissues were then found to be teeming with that organism. The patient originally suffered from suppurative appendicitis with consecutive peritonitis and blood infection by the colon bacillus, and this organism had almost certainly found its way into the cavity of the uterus from the blood circulating in its walls. The other 3 cases recovered, after presenting some febrile disturbance during the puerperal state. Of the 15 cases in which the liquor amnii contained saprophytic anaërobic bacteria, 2 were suffering from advanced carcinoma of the cervix uteri, and died after being delivered by Cæsarean section. The other cases made good recoveries, only 6 of them presenting any rise of temperature during the puerperium. The patient from whose liquor amnii both the *Streptococcus pyogenes* and the *Staphylococcus pyogenes aureus* were cultivated died from general septicæmia thirty-two days after labour, and streptococci were found post-mortem in the blood and organs. The patient who had only the *Staphylococcus pyogenes aureus* in her uterus, presented a febrile temperature for five days after delivery, and then made a good recovery.

From these observations the authors conclude that during labour fever may be produced by micro-organisms in two ways: (1) Parasitic organisms may obtain entrance to the uterine cavity, and from thence may invade its walls and set up a general infection. (2) Organisms of putrefaction may produce toxins by their growth in the liquor amnii, and these toxins, being absorbed, may give rise to a general febrile condition.

That both the *Streptococcus pyogenes* and also saprophytic organisms may grow in the liquor amnii during labour without producing any disturbance in the mother is shown by the following cases (Menge and Krönig):

1. A long afebrile labour; delivery by craniotomy some hours after cessation of fœtal heart-sounds. In the lungs of the fœtus the *Streptococcus pyogenes* and an anaërobic gas-producing bacillus were found; from the blood of the umbilical vein the anaërobic bacillus was

alone cultivated. There was no fever during the puerperium. On the sixth day after labour the uterine lochia were examined, and the same organisms—the *Streptococcus pyogenes* and the anaërobic bacillus —were found in them as had been isolated from the fœtal lungs and blood.

2. Child died shortly before birth; no fever during the puerperium; in the alveoli and bronchi of the fœtal lungs were found both cocci and bacilli.

In neither of these cases was the liquor amnii examined, as the women presented no abnormal symptoms, and but for the bacteriological examination of the fœtal tissues the fact that the uterine contents had been infected by micro-organisms would have been entirely overlooked.

The consideration of these two cases leads to the study of a most interesting question, some aspects of which have attracted but little attention—namely, the poisoning of the fœtus *in utero* by the action of micro-organisms.

There are three possible ways by which the fœtus may be affected by microbes while still contained in the uterus:

1. Organisms circulating in the mother's blood may be carried to the placenta, and may in that organ find their way from the maternal into the fœtal blood, and so produce a general infection of the unborn child.

2. The liquor amnii may contain organisms which may invade the fœtal tissues through the lungs, intestinal canal, or skin (improbable).

3. Toxins alone produced by micro-organisms in the mother's blood may find their way through the placenta and poison the fœtus, or toxins formed during the decomposition of the liquor amnii by organisms may pass from it into the fœtal blood.

1. *Infection through the Placental Circulation.*—Experiments on the lower animal by such observers as Max Wolff,[21] Malvoz,[22] Birch-Hirschfeld,[23] Rosenblatt,[24] Simon,[25] and others, have shown that organisms may under certain circumstances pass from the maternal to the fœtal circulation *viâ* the placenta. In this way infection of the fœtus has been artificially produced by such germs as *Bacillus anthracis*, *Streptococcus pyogenes*, *Staphylococcus aureus*, *Bacillus coli communis*, and *Bacillus tuberculosis*.

The same process has been observed clinically in man with such organisms as *Bacillus tuberculosis*, *Pneumococcus*, *Bacillus typhosus*, *Streptococcus pyogenes*, *Staphylococcus pyogenes aureus*, *Bacillus coli communis*, and certain anaërobic saprophytic organisms.

2. *Infection of the Fœtus through the Liquor Amnii.*—Experiments on animals have demonstrated that when the maternal blood contains micro-organisms, not only may the fœtus be infected through the placenta, but the contents of the uterus (liquor amnii) may also be infected by the passage of the organisms from the uterine bloodvessels into the amnial sac. Thus it is possible that in some cases of general infection of the mother the fœtus may be infected in two ways—*i.e.*, (1) through the umbilical vein *viâ* the placenta; (2) through the lungs and intestinal canal from the liquor amnii. One of the cases reported by Menge and Krönig, and already referred to, lends support to this view.

A pregnant woman was infected with the *Bacillus coli* from a suppurative appendicitis, and gave birth to a stillborn child. In the umbilical vein and fœtal heart's blood the *Bacillus coli* alone was found; in the bronchi and intestinal canal of the fœtus the *Bacillus coli* was found associated with an anaërobic organism; both these organisms were also found in the lochia. It seems probable that the fœtal heart's blood had been infected from the maternal blood through the placenta, but that the cavities of the fœtal bronchi and intestinal canal had been infected from the liquor amnii, and that previous to this occurrence the liquor amnii had been itself infected in a twofold manner—(1) directly from the mother's blood with the *Bacillus coli;* (2) from the vagina, through the cervix, by the saprophytic anaërobic organism.

From the observations of Menge and Krönig infection of the fœtus from contaminated liquor amnii seems to be much more common than through the placental blood. They record fourteen cases in which they found micro-organisms in the blood or tissues of fœtuses which had died before, or soon after, birth. In five of these cases the organisms were found in the blood, whilst in the other cases they had apparently invaded the lungs and intestinal canal from the liquor amnii. These fourteen cases of infection of the fœtus *in utero* are of great interest. In one case the infecting micro-organism was the *Streptococcus pyogenes;* in four the *Bacillus coli* was found; and in the remaining nine the infection was due to anaërobic organisms of putrefaction. In several instances these organisms had produced considerable quantities of gas in the uterus and fœtal tissues. The fact that the fœtus may thus be infected before its birth explains some cases of fœtal death before or shortly after birth, in which changes have been found in the lungs and other organs.

Thus, a patient of Legry's[26] had slight febrile disturbance during

labour and the puerperium, but made a good recovery. The child lived eleven hours. At the post-mortem examination broncho-pneumonia and sero-purulent pleurisy were found, and the *Streptococcus pyogenes* in pure culture was obtained from the lungs and pleural cavities. Another case recorded by Menge and Krönig presented fever during labour and the puerperium, and died thirty-two days post-partum. The child lived twelve hours, and then died of septic broncho-pneumonia due to the *Streptococcus pyogenes*.

Two cases have already been referred to in which the fœtuses died presumably from infection of the lungs, in one case by the *Streptococcus pyogenes* and saprophytic organisms, and in the other from purely saprophytic bacteria. In neither of these cases was there any rise of temperature during labour, and the cause of the fœtal deaths would have been overlooked if post-mortem examinations had not been made.

3. *Infection of the Fœtus by Toxins produced in the Liquor Amnii.*—In two cases of fever during labour, associated with infected liquor amnii, reported by Menge and Krönig, the blood and tissues of the stillborn fœtuses were free from germs. It seems probable that the death of the fœtuses was due either to the high temperature of the mother or to poisoning by toxins produced in the liquor amnii. This poisoning of the fœtus by toxins alone, if it does occur, appears to be less common than infection of the tissues by organisms.

The uterine lochia of non-febrile patients have been examined, at various periods after labour, by a number of workers, the chief of whom are, Döderlein,[27] Czerniewski,[28] and Krönig. The lochial fluid was removed from the fundus uteri, by means of aspiration into a piece of fine sterilized glass tubing, every precaution being taken to avoid contamination from the vagina and cervix. Döderlein examined the lochia in 27 cases, and found them sterile in 26. Czerniewski investigated 57 cases, and found the uterine contents free from organisms in 56. Of 63 women examined by Krönig, the uterine lochia were sterile in 50. In thirteen cases organisms were discovered. These were: (1) *Streptococcus pyogenes* (3 cases); (2) *Staphylococcus pyogenes aureus;* (3) *Gonococcus* (in 4 cases); (4) *Bacillus coli communis;* (5) various anaërobic organisms (6 cases).

The discrepancy between the results of Krönig and those of the other observers is probably due to the fact that the former employed more reliable culture methods than the latter. Thus, Krönig found the gonococcus in 4 cases, and anaërobic bacteria in 6 cases, and it

must be remembered that neither of these two varieties of organisms can be cultivated by ordinary methods.

As regards the pyococci (*Streptococcus pyogenes* and *Staphylococcus pyogenes aureus*) found by all three observers in the uterine lochia of non-febrile patients, it may be remarked:

1. It is possible that the uterine cavity may have been previously infected by organisms of such slight virulence that no febrile or other disturbance resulted, and that these cases were really instances of mild puerperal infection. That this is possible is shown by the fact that in four of the non-febrile and apparently normal cases gonococci were found in the uterus.

2. In some cases, in spite of precautions, the organisms may possibly have been introduced into the uterus by the glass tube during the process of removing the lochial secretion for examination.

In the vast majority of cases the uterine cavity was absolutely sterile, and it is probable that whenever organisms of any sort are found in the puerperal uterus the case should be looked upon as abnormal. The view, first expressed by Döderlein, that the normal puerperal uterus is sterile, and that any departure from this condition must be looked upon as abnormal, if not pathological, is generally accepted by bacteriologists.

Observations on the uterine lochia of febrile women have been made by a number of investigators, among whom may be mentioned Döderlein, Czerniewski, Krönig, and Williams.[29]

The results obtained by Williams are in accordance with the others, and are as follows:

Forty cases were investigated. In 11 cases the lochia were sterile, and one of the patients had malarial plasmodia in her blood. In 29 cases (72·5 per cent.) the lochia contained organisms, as follows:

Streptococcus pyogenes ...	8 cases, *i.e.*, 20 per cent.; all recovered.
Staphylococcus pyogenes aureus	3 „
Bacillus coli	6 „
Gonococcus	2 „
Anaërobic saprophytes... ...	4 „
Aërobic saprophytes	3 „
Organisms found in cover-glass preparations, but which could not be cultivated	4 „
Bacillus of diphtheria	1 case
Bacillus aerogenes capsulatus ...	1 „
Bacillus typhosus	1 „

There was mixed infection in 3 of these cases:

1. *Streptococcus and Bacillus coli.*
2. *Staphylococcus and Bacillus coli.*
3. *Streptococcus, staphylococcus, Bacillus typhosus, and an anaërobic Saprophyte.*

Streptococcic Infection.—To this form of infection the great majority of cases of puerperal fever, whether of a mild or severe type, belong. In 91 cases of fever during the puerperium, Czerniewski found the *Streptococcus pyogenes* in the uterine lochia 49 times —*i.e.*, 53·8 per cent. In 35 cases the streptococci were in pure culture; in 13 cases they were associated with saprophytic organisms; in 1 case they were associated with staphylococci. Krönig examined the lochia of 296 febrile women, and found streptococci in 56 cases —*i.e.*, in 19 per cent. From this series of 56 cases of streptococcic infection there were 2 deaths—*i.e.*, a mortality of 3·5 per cent. In Williams' 40 febrile cases (quoted above), there were 8 of streptococcic infection (*i.e.*, 20 per cent.), without a death. There is evidence also in support of the view that mild cases of streptococcic infection may present no febrile or other disturbance, and that the invasion of the uterus by this organism is even more frequent than the above figures would indicate.

The streptococcus was found so constantly in the blood and tissues of women who had died of sepsis after labour that the older observers looked upon it as the sole cause of this condition. Further investigations have shown that this is not the case, but all are agreed that the streptococcus is responsible for the great majority of fatal cases, and for a large number of those cases which ultimately recover.

The streptococcus is found in many abscesses; it plays a most important part in the production of septicæmia and pyæmia following wounds, in ulcerative endocarditis, and in ulcerative tonsillitis; many also consider that it is identical with the streptococcus of erysipelas. As has been shown by Widal[31] and others, the streptococcus is capable of producing various manifestations when it has gained entrance to the puerperal uterus. In fatal cases a pure septicæmia, without obvious inflammation or formation of pus foci, may result, or inflammation and suppuration in the pelvis or in distant parts of the body may be produced; whilst false membranes, similar in appearance to those of diphtheria, may sometimes be formed throughout the genital canal and in the peritoneum.

The virulence of the organism varies greatly. When artificially

cultivated in the presence of oxygen, it soon loses its virulence. This appears to be true of it also when it lives a saprophytic existence, as in the secretions of the vulva or of the vagina. Whether such a streptococcus of attenuated virulence is capable of regaining its parasitic powers, while residing in the vagina, is doubtful; but there is evidence, from experiments on animals, that even under these conditions, although incapable of attacking healthy structures, it may be able to invade tissues that have been damaged, either mechanically or by the action of chemical substances produced by the process of putrefaction.

The observations of the bacteriologist are in accord with the experiences of the obstetrician, that the most virulent infective agents are those which have been living a parasitic existence up to the time of their insertion into the vagina, and which have passed through no saprophytic stage during the transit from one host to the other.

Streptococci are generally acknowledged to be common in the vulval secretions of healthy pregnant women, and, according to some, are not infrequent in the secretions of the vagina, or even of the cervix; but the evidence points to the fact that, whatever their virulence may originally have been, they lose all, or at any rate the greater part, of their parasitic power by a residence in these situations. Streptococci may infect the uterus either alone or in association with various other organisms. In the 49 cases of streptococcic infection recorded by Czerniewski and mentioned above, the streptococci were in pure culture in 35 cases.

The uterus and other tissues have been carefully examined in fatal cases by Bumm,[30] Widal,[31] and Menge and Krönig. All these observers have noticed that the streptococci possess much greater power of penetrating the uterine wall than other organisms. There is generally a superficial layer of necrotic tissue lining the uterine cavity, and this is infiltrated with various kinds of bacteria. Below this is a layer of small-celled infiltration, beyond which the streptococci alone appear to have the power of penetrating.

All who have investigated the matter are agreed that the interior of the uterus, and especially the placental site, is the primary seat of infection, from which the organisms pass to the blood and surrounding tissues. Infection may primarily take place from wounds of the cervix, vagina, or perineum, but not nearly so commonly as from the placental site. The invasion of the uterine walls usually takes place either along the bloodvessels or lymphatics or both; more rarely the cocci spread along the surface of the Fallopian

tubes to the peritoneum. Menge and Krönig report a fatal case of streptococcic infection, in which the cervix uteri had been badly torn during labour. The surfaces of the uterus and of the wounded cervix were covered with streptococci, but only at the placental site had the deeper tissues been invaded.

Staphylococcic Infection.—Staphylococci were found by Widal[31] and others, in association with streptococci, in the foci of suppuration present in the tissues of women who had died of puerperal septicæmia; but it was at one time thought that they merely followed in the track of the streptococci, and were incapable of producing infection by themselves. Further experience has shown that this was a mistaken view, though it is true that pure staphylococcic infection usually results in a much milder type of disease than does streptococcic infection, and that it is apparently seldom fatal.

Doléris[32] reported several cases of pure staphylococcic infection, and quoted others by Strunckmann, Hahn, and Cannon. In all of Doléris' cases the *Staphylococcus pyogenes aureus* was present, and in one case the *Staphylococcus pyogenes albus*. In this latter case there was a 'diphtheritic' membrane on the vulva, but there is no note of any bacteriological examination of it.

Cuthbert Lockyer[33] records a fatal case of puerperal sepsis in which the vagina was covered with 'diphtheritic' membrane, cultures from which gave the *Staphylococcus pyogenes albus* in a state of purity; staphylococci were also found in the uterine wall. It is therefore evident that so-called 'diphtheritic' membrane may be produced by both streptococci and staphylococci.

Reference may here conveniently be made to similar membranes of the genital canal, due to other varieties of micro-organism. This condition may be due to the true diphtheria bacillus. Cases of this true diphtheria of the genital canal have been described by Nisot,[9] Bumm,[10] Williams,[11] and others. Stevens[34] reports the case of a woman, five months pregnant, who suffered from a membranous vaginitis, apparently due to the presence of the *Bacillus coli communis*. A case is mentioned by Menge and Krönig of 'diphtheritic' exudation on the surface of the uterine cavity from which only anaërobic bacteria could be obtained.

Thus, as far as we know at present, so-called 'diphtheritic' exudations of the genital canal may be true diphtheria, or may be due to infection by streptococci, staphylococci, the colon bacillus, or anaërobic putrefactive organisms.

Infection by the Gonococcus.—The gonococcus of Neisser is a

not uncommon cause of febrile disturbance during the puerperium. Such cases of gonorrhœal infection are usually milder than those produced by the other pyococci, but they may be very chronic.

Krönig carefully examined the lochia removed from the upper part of the uterus in 296 women who had febrile symptoms during the puerperium; in 31 instances he obtained pure cultures of the gonococcus on a mixture of human blood serum and agar (as recommended by Wertheim). Others have also cultivated the gonococcus from the lochia. Some earlier workers, such as Bumm and Döderlein, considered that puerperal intra-uterine gonorrhœa was frequently complicated by the presence of other pyococci, but Krönig's researches do not confirm this view. Krönig has been able to cultivate the gonococcus from the lochia of 50 lying-in women. Of these, 41 had febrile symptoms, and 9 were entirely free from a rise of temperature during the puerperium. As a rule, the disturbance to temperature and pulse is less marked in this variety of puerperal infection than it is in others.

Infection by the Colon Bacillus.—The *Bacillus coli* was first obtained in pure culture from a case of puerperal infection by Von Franqué,[35] and it has since been observed by others, such as Gebhard, Krönig, Marmorek, and Williams. It is an organism of putrefaction, and is capable, like the pyococci, of growing either in the presence or absence of oxygen. Occurring constantly in the intestine, it is found with great frequency in the secretions of the vulva. Its rôle as an infective agent during the puerperium is not well understood. Under certain circumstances, when inserted into the blood in large numbers, it causes fatal blood-poisoning, as in cases of appendicitis, strangulated hernia, etc.

It may under such circumstances gain an entrance to the uterine cavity from the blood circulating in the uterine walls. In the pregnant uterus it is capable of decomposing the liquor amnii, with resulting fœtor and production of gas, and it has been shown under these circumstances to be capable of invading the lungs and alimentary canal of the fœtus. It is frequently found in association with other organisms, such as the pyococci, and possibly its presence may increase the virulence of such germs. Some think that by absorbing oxygen this organism may assist the strictly anaërobic* putrefactive bacteria in decomposing the uterine contents, and even of invading the uterine walls.

* *i.e.*, capable of multiplying only in the absence of oxygen.

Infection by Anaërobic Putrefactive Organisms.—That the organisms of putrefaction may, by their process of growth in the liquor amnii, lochia, retained blood-clot, retained placenta, etc., produce toxins which, by absorption, are capable of poisoning the blood has long been recognised under the name of septic intoxication, or sapræmia (Duncan). It has lately been shown that under certain circumstances these putrefactive germs, which can only grow in an absence of oxygen, may also be able to invade the uterine walls and tissues, and thus to produce a true septic infection. The chief workers in this field are Bumm, Von Franqué, and especially Krönig (*vide* Menge and Krönig, *loc. cit.*). Such organisms have been found in pure culture in puerperal parametric abscess and in purulent peritonitis. They cannot live in tissues which contain free oxygen ; hence they are unable to invade the normal bloodvessels, but they may grow in the lymphatics and serous cavities, and even in thrombosed bloodvessels from which the free oxygen has been absorbed by the surrounding structures. Such extensive invasion of the tissues by the anaërobic organisms of putrefaction is much rarer than similar invasion by the pyococci, but, in its less-marked degrees, Krönig thinks it is common ; in fact, he holds that pure sapræmia without some invasion of the tissues by anaërobes is the exception rather than the rule.

Many different varieties of these anaërobic germs have been described—cocci, bacilli, etc.—and some of them possess the power of producing considerable quantities of gas during their growth. It has already been mentioned that such organisms may invade the tissues of the fœtus *in utero* by a passage from the contaminated liquor amnii. Pure anaërobic infection produces, as a rule, less marked constitutional disturbance than infection from the other varieties of micro-organisms. Mixed pyococci and anaërobic infection may for a time occur, but it seems probable that one species of organism destroys the other after a longer or shorter time.

Bacteriology of the Vagina and Cervix during Pregnancy and the Puerperium.

Many workers have been engaged in studying the bacteriology of the vagina during pregnancy and after labour, and much has been written on the subject. Though others had preceded him in this field of research, Gönner,[36] in 1887, was the first to employ modern bacteriological methods in his investigations. He examined the vaginal secretion of 32 pregnant women, and was led to the belief that this secretion does not usually contain the micro-organisms

found in puerperal infection. He further discovered many organisms in cover-glass preparations, which he was unable to cultivate by ordinary methods (anaërobes), and came to the conclusion that auto-infection was not possible, and that prophylactic antiseptic douching was unnecessary.

Döderlein,[27] in the same year, found that the uterine lochia were sterile, but that in 75 per cent. of cases the vaginal lochia contained various organisms—among others, the various pyococci. He considered that auto-infection is possible, and that prophylactic vaginal douches are called for.

Since that time many observations have been made, some supporting the views of Gönner, others those of Döderlein. Winter[40] found that the normal uterus was always sterile, but that the cervix and vagina, either during or apart from pregnancy, always contained bacteria, among which the pyococci often occurred. On the other hand, Thomen[37] and Samschin[38] found that the vaginal secretion during pregnancy only contained anaërobic bacteria, which could not grow in the presence of oxygen. Steffeck[39] discovered pathogenic organisms in 41 per cent. of his cases, and strongly urged the necessity of prophylactic douching. The observations of Burguburu[40] and Witte[41] confirmed this opinion.

Döderlein, in 1892, published his paper on 'Vaginal Secretion.' Basing his views on the examination of 195 pregnant women, he came to the conclusion that there were two sorts of vaginal secretion: 1. Normal secretion: Thick, white, strongly acid, containing epithelial cells, large numbers of bacilli (*vaginalis bacillus*) which presented special features during cultivation, and sometimes yeast cells.

2. Abnormal secretion: More fluid than normal secretion; yellow; neutral or alkaline in reaction; many leucocytes, as well as epithelial cells, were present; all varieties of micro-organism were found in it, the *Streptococcus pyogenes* being detected in 10 per cent. of such cases.

Döderlein found that 55·3 per cent. of his cases had normal and 44·6 per cent. abnormal secretion. He thought that normal secretion could readily be distinguished from abnormal by means of cover-glass preparations. In normal secretion he considered that the acid reaction and the presence of the vaginal bacilli played an important part in destroying pathogenic and other germs which might gain an entrance to the vagina. In patients with this variety of secretion there was, he held, no danger of auto-infection, and prophylactic douching was unnecessary. On the other hand, he maintained that in cases with abnormal secretion pathogenic organisms were habitually present in the vagina, and that under such circum-

stances auto-infection was possible and prophylactic douches were called for. These views of Döderlein were confirmed in a general way by observations by Williams[42] and Burkhardt,[43] though the results of their experiments differed from his in certain points.

Krönig,[44] in 1894, examined the vaginal secretions of 100 pregnant women, and came to quite different conclusions. His experiments led him to express the view that 'the vaginal secretion of pregnant women who have not been examined, no matter whether normal, pathological, or highly pathological, never contains organisms which grow aërobically upon the ordinary media at the body temperature, except yeast and gonococci, and therefore never contains septic bacteria. The vagina of every pregnant woman who has not been examined is therefore aseptic.' He believed that the classification of the vaginal secretion into 'normal and abnormal,' as by Döderlein, was not in accordance with fact; he never found the secretion other than acid, though the degree of acidity varied, and he considered that the pathogenic bacteria which had been found in the vagina by this and other observers had been inserted by them from the vulva during the process of procuring the secretion for examination.

Later Krönig[44] investigated the bactericidal action of the vaginal secretion during pregnancy. He introduced the *Bacillus pyocyaneus* into the vagina of 20 pregnant women, and found that it was destroyed in about twenty-four hours; it perished most rapidly in secretion which contained Döderlein's vaginal bacillus in a state of purity. He experimented with staphylococci in 16 cases, and found that they disappeared in from fourteen to twenty hours. Streptococci were inserted in 3 cases, and were found to have died in six hours. These observations were made on patients showing both so-called 'normal' and 'abnormal' secretions, and demonstrated the fact that the vaginal secretion during pregnancy, no matter what its characters might be, possessed a potent bactericidal power for pathogenic micro-organisms. From these experiments Krönig thought that the vagina of a pregnant woman, who had not been examined for three days, may always be considered as aseptic. Other observations by the same worker pointed to the fact that antiseptic douches, instead of destroying pathogenic organisms in the vagina, really tended to preserve them by lessening the natural bactericidal qualities of the vaginal secretion.

Menge,[45] in his investigations on the vaginal secretion of 50 non-pregnant women, confirmed the views of Krönig, and showed that this secretion also possessed the power of destroying micro-organisms, though to a less degree than the same secretion during pregnancy.

Walthard[46] examined the cervical and vaginal secretion of 100 pregnant women, and found streptococci in 27 per cent. of his cases. He found that these streptococci grew very badly on solid media, but multiplied rapidly in broth containing sugar. When injected into healthy animals they had no pathogenic power, but were able to produce lesions in tissues which had been previously damaged by cutting off the blood-supply. Vahle[48] examined 30 pregnant women, and found streptococci in 10 per cent. and staphylococci in 33 per cent. of his cases.

Menge and Krönig reported another series of 67 cases, making with the previous cases a total of 167 cases, with the following results: In 152 cases—*i.e.*, 92·8 per cent.—agar plates were absolutely sterile. In 15 cases there was a growth; 12 of these were considered instances of contamination, 2 showed a non-pathogenic coccus, 1 showed a non-pathogenic streptococcus.

Kottmann[47] investigated 54 cases, and found streptococci in 7 cases—*i.e.*, 13 per cent.—staphylococci in 37, and the colon bacillus in 6, together with various other micro-organisms.

These series of observations are very contradictory, and the subject is obviously as yet by no means settled. While Gönner, Thomen, Samschin, Krönig and Menge found the vagina free from pathogenic organisms, the following observers detected streptococci and other organisms in a varying percentage of cases: Burkhardt, 4 per cent.; Steffeck, 4 per cent.; Döderlein, 4 per cent.; Burguburu, 8·5 per cent.; Vahle, 10 per cent.; Witte, 12·5 per cent.; Kottmann, 13 per cent.; Winter, 15 per cent.; Williams, 20 per cent.; Walthard, 27 per cent.

Krönig maintains that those observers who have found pyococci (other than gonococci) in the vaginal secretion of pregnant women have themselves inserted these organisms into the vagina, from the vulval secretions, during the manipulations necessary to obtain the secretion for examination. He points out that all observers who had found pyococci in the vagina had obtained the vaginal secretion after the passage of a speculum, the end of which had come in contact with the vulval secretion before it had entered the vagina, and that it was practicably impossible to obtain secretion from any part of the vaginal wall which had not been touched by the ends of the speculum. It is generally admitted that the secretions of the vulva frequently contain *streptococci*, *staphylococci*, and the *Bacillus coli*, and anyone who has made similar bacteriological investigations knows how difficult it is to avoid contamination in the manner suggested by Krönig, and will readily admit that his

criticism on this point is not unreasonable. He obtained his secretion by aspiration into a piece of fine sterilized glass tubing, which was carefully inserted into the vagina without coming in contact with the vaginal orifice.

Bearing this point in mind, Williams[50] investigated another series of 92 cases, with the following results: 30 cases (32·6 per cent.) presented the characters of Döderlein's 'normal' secretion, and 62 cases (67·3 per cent.) had 'abnormal' secretion. In 4 cases gonococci were cultivated; in 12 cases other forms of cocci were found, 6 aërobic and 6 strictly anaërobic. Of these 12 cases containing cocci, only 3 could possibly be looked upon as containing pathogenic organisms—namely, 2 which contained the *Staphylococcus epidermidis albus* and 1 containing a strictly anaërobic streptococcus. But the *Staphylococcus epidermidis albus* is not found in cases of puerperal infection, and the *Streptococcus pyogenes* is not strictly anaërobic.

These results were quite contradictory to those of his first series (above mentioned), and confirm the views of Krönig. Williams[51] has made yet another series of most interesting observations. 'From each of 25 pregnant women who had not been examined previously I removed with a platinum needle some of the secretion from the margins of the hymen and the inner surface of the labia minora, and then obtained a certain amount of vaginal secretion by means of Menge's tube,* immediately afterwards inserted a sterilized glass specimen into the vagina and obtained the secretion from portions of the vaginal wall which apparently had not come in contact with the tip of the speculum.'

The following results were obtained: In 4 of the 25 cases the same organisms were found in each variety of secretion, and hence occurred in both the vulva and vagina. Of the remaining 21 cases, staphylococci (either *albus* or *epidermidis albus*) were observed in the vulval secretion 15 times (60 per cent.), and in the vaginal secretion removed by the speculum 10 times (40 per cent.), and were entirely absent from the vaginal secretion removed by the fine glass tubing by means of aspiration.

The *Bacillus coli* was found 4 times in the vulval secretion, and twice in vaginal secretion removed by the speculum, but was entirely absent from the vaginal secretion removed by Menge's glass tube. 'Adding together the cases in which staphylococci or colon bacilli were observed, we find that pyogenic bacteria were found in the

* A small glass tube (into which the secretion is aspirated), inserted into the vagina without coming in contact with the vaginal wall.

vulval secretions of 19 cases (76 per cent.), in the specular secretion of 12 cases (48 per cent.), and were entirely absent when secretion was obtained by means of the tube.'

These observations confirm the views of Krönig; they show that pyogenic organisms occur in the vulval secretions of 76 per cent. of pregnant women, and that they may from thence be carried into the vagina in 40 per cent. by the speculum, and probably by the finger. It is true that these organisms while residing in the vulval secretions lose much of their virulence, but the above bacteriological investigations show the importance of disinfection of the external genitals before any vaginal manipulation is made, if every possible source of infection by such procedure is to be avoided.

From a review of the above-mentioned researches, it will be seen that it is generally admitted that infection of the uterus, during or after labour, may take place from gonococci or from anaërobic saprophytic organisms, which were present in the vagina before labour, but that, in spite of some observations to the contrary, the great weight of evidence is to show that forms of infection other than these are in the vast majority of cases (if not always) due to the direct introduction from without of micro-organisms which had not previously resided in the vagina. These researches emphasize the importance of asepsis in midwifery practice, and suggest that the douche, used as an antiseptic agent, is as a rule unnecessary, if not positively harmful.

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REVIEW OF CURRENT LITERATURE.

OBSTETRICS.

Chyluria in Pregnancy (MEINERT: *Cent. für Gynäk.*, No. 16, 1902).—The patient was aged twenty-five, first menstruated at fourteen years, had been three years married, was always healthy, and had a good family history. The first pregnancy was normal, but there was no milk in the breasts after delivery. In the second pregnancy the urine was noticed to become cloudy towards the end of the fifth month; by the seventh month it had the colour and consistency of milk. Now and then small flocculi made micturition painful, and the patient consulted Meinert on account of threatened retention. He drew off urine which could not be distinguished in appearance from healthy cow's milk. A catheter specimen on examination gave an acid reaction, polarization 0, specific gravity 1017, albumen 0·34 to 0·44 per cent., fat 0·48 to 0·97 per cent., and by centrifugalization this reached 1 per cent; dextrose, lactose, albumose, peptone, were all absent. There were no red or white blood discs or casts present, but uric acid needles and oxalate crystals were found. There were no bacteria or filaria embryos, nor were these found in the blood. Fat globules were present. Filtration gave no solid deposit upon the filter-paper; the urine cleared up by shaking with ether, except for a fine deposit of fibrin in the form of a network, which settled at the bottom of the vessel. On February 6, 1901, spontaneous labour occurred. For eight hours afterwards the chyluria existed, and then cleared up, leaving the urine normal, with a specific gravity of 1015. Again on February 8 the milkiness returned, and finally on February 13 there was a cloudiness to be noticed; on both occasions this occurred during the night. The breasts did not secrete. The child was poorly developed, and was kept alive with difficulty. The mother's condition was good both during the chyluria and after. C. L.

Urobilinuria in Pregnancy, and Increase of the Same in Cases of Intra-uterine Death of the Fœtus (MERLETTI: *Cent. für Gynäk.*, No. 16, 1902).—Two years ago Ferrari of Padua instituted investigations upon the relationships of the secretion of urobilin and stercobilin during the puerperal state. These researches have been extended by the author, who states that the anatomical and functional changes in the liver, intestines, kidneys, and circulation incident to pregnancy are the probable sources of these pigments. Ferrari's results, published by the Medico-Chirurgical Society of Parma, February, 1901, although

they concern only a small number of observations, and are limited to the last two months of gestation and the first days of the puerperium, nevertheless establish the importance of the study, and show that towards the end of pregnancy the urine and fæces contain a large increase of bile products. The author has extended these observations during the entire period of pregnancy, and has confirmed the fact that an alteration occurs in the process of bile secretion.

The quantitative estimation of the pigments was carried out by Riva's method. The urine of twenty-four hours was collected and kept in the dark. To 15 c.c. of this urine, acetic acid was added, next 2 c.c. of chloroform were added, and the mixture shaken up for a long time. The chloroform was separated by centrifugalization, and after pouring off the supernatant urine one or two drops of fuming nitric acid were added to the chloroform; the latter was finally treated with 4 c.c. of alcohol, and the spectroscopic test applied. If no absorption band appeared between the *b* and *F* lines, a double or triple washing of the urine was tested. If with the fluid in a cell of 1 cm. diameter the band is very clear with the first washing, then the extract is diluted by one-half, one-quarter, one-eighth, one-sixteenth, and so on until the band is only just distinguishable. For stercobilin 5 grm. of fæces are mixed with 10 c.c. of chloroform; the mixture is then filtered, and one or two drops of fuming nitric acid are added to the filtrate; this is then put in the cell, the diameter of which is 1 cm., and tested by the spectroscope as for urine.

As a qualitative test, the chloroform extract gives a green fluorescence with 2 per cent. zinc chloride in alcoholic solution made alkaline with 5 drops of ammonia. The intensity of the fluorescence can by practice be used as a quantitative test.

The writer's conclusions are, that in healthy women in the last three months of pregnancy bile is found in the urine in double and treble the amount found in the non-pregnant state. This increase in pigments leads the author to speak of 'pregnancy-urobilinuria,' which, clinically at least, is to be considered as physiological, as none of the sufferings consequent on pregnancy can be assignable to the presence of these pigments in the urine.

The relation of the urobilin curve to death of the fœtus is interesting. The writer first noticed a marked increase in the amount of urobilin when he was studying a case of pernicious anæmia in a pregnant woman in whom, after death of the fœtus *in utero*, a marked improvement in her general state and circulation was noted. He says: 'Since an increase in the hæmolysis in the mother's blood cannot be imagined, the cause for the rise in the bile curve must be sought in the fœtus. It is known that the fœtal blood after death is split up, the hæmoglobin parts company with the globulin, and mixes with the serum in the fœtal tissues and in

the amniotic fluid. Is it not logical to conclude that, just as the maternal organism takes part in the elimination of the decomposition products of fœtal albuminoids (acetonuria), so also it is concerned in the excretion of the products of globulin destruction—viz., the biliary pigments? The suggestion is that with intra-uterine fœtal death, not only acetonuria, but also urobilinuria, is to be taken into account as a fresh objective indication in diagnosing the death of the fœtus. The investigation must be made soon after the death of the fœtus—*i.e.*, before the biliary products are all eliminated. The urine must be kept from the action of light, as under normal conditions a quantity of chromogen may be present, which in the light can generate urobilin.' Since writing the above the author has studied the question in four cases of fœtal death, and has with each found increased urobilinuria. As proved both by the spectroscope and by the fluorescence test, the condition disappeared entirely in from five to ten days after delivery. C. L.

Latent Hæmorrhages in Pregnancy (*Comptes Rendus de la Soc. d'Obstét., de Gynéc., et de Pædiat. de Paris*, tome iv., 1902, p. 51).—Doléris narrates two cases of internal hæmorrhage complicating pregnancy, both of which were remarkable from the fact that the symptoms were so vague that it was impossible to arrive at an exact diagnosis.

The first case was that of a patient thirty-five years old, who was admitted to the hospital on January 23, 1900, seven months advanced in her fourth gestation. She had experienced intense backache and pain in the abdomen during her present pregnancy. The night before admission she had an attack of syncope while rising from bed, and another attack the following morning. On admission the face was pale and slightly cyanosed; the pulse 100 but quite good. There was some difficulty of breathing, which was much aggravated when she lay down. The temperature was slightly raised; there was no albuminuria. On examining the abdomen the uterus was found abnormally tense, and as large as at term. Labour pains set in gradually, and on the morning of January 26, the os being dilated to the size of a five-franc piece, the membranes were ruptured, and 470 grm. of liquor amnii collected. Forty-five minutes later a dead and macerated fœtus was expelled, weighing 2,350 grm. Hardly was the cord divided when the placenta appeared at the vulva, and was delivered. Immediately afterwards a large quantity of clot and dark fluid blood escaped, and notwithstanding that pressure was applied to the uterus, a great deal remained behind, and had to be removed by the fingers. The uterine cavity was douched out with carbolic acid (1 in 1,000); 500 grm. of serum were transfused. The solid clots weighed 1,060 grm., and about 200 grm. of liquid semi-solid blood

escaped as well. The blood had a stale odour, but was not putrid. On January 29, as there was a slight rise of temperature and the lochia were fœtid, the uterus was curetted, washed out, and packed with an antiseptic tampon. After this the signs of infection rapidly disappeared, and involution proceeded satisfactorily. Examination of the placenta revealed that the coronary sinus was ruptured in two places. In commenting on the above, Doléris believes that in the absence of albuminuria, or of any cardiac or hepatic disorders, or of any history of traumatism, the rupture of the sinus was due to an acute congestion, probably nervous in origin.

The second case has reference to a large pelvi-abdominal hæmatocele, occurring in the course of a twin pregnancy. The patient, a primipara, aged thirty-one, was brought to the hospital on May 28, 1901. She was seven months pregnant, and suffered from obstinate constipation. On the night of May 26 she was awakened by a sudden attack of acute pain in the abdomen, with collapse, which gradually increased in severity, whereupon she was sent to the hospital as a case of acute peritonitis following on intestinal obstruction. On admission patient was very collapsed; the face wore an anxious expression; pulse 180; temperature normal; marked difficulty of breathing. The abdomen was very large and distended, the height of the uterus being 33 cm., and the distance between the iliac spines 53 cm. From abdominal and vaginal examination a diagnosis was made of twin pregnancy complicated by hydramnios. The absence of vomiting and pyrexia seemed to negative peritonitis. At 3 p.m. on the day of admission the membranes were artificially ruptured, and 300 grm. of liquor amnii escaped. At 7.30 p.m. a dead male child was born, weighing 500 grm. A second bag of membranes immediately presented, and was ruptured, giving exit to only a very little fluid. The second child, also a male weighing 530 grm., was delivered at 8 p.m., and was followed ten minutes later by the expulsion of a single placenta, which weighed 500 grm. There was a distinct improvement in the patient's condition after delivery, but the abdomen remained distended, and became painful on June 3. The patient gradually got worse, and nine days later a careful examination of the abdomen revealed the presence of an indefinite mass above the pubes, extending to the iliac fossæ, and reaching within three fingers' breadth of the umbilicus. *Per vaginam* the uterus measured 11 cm., and the cervix was found pushed upwards and forwards behind the symphysis by an elastic painful swelling which occupied Douglas's pouch. There was slight pyrexia. Two days later the swelling underwent a rapid increase in size, and extended to the umbilicus. Doléris considered that it was either an encysted peritonitis or a collection of blood, and advised an immediate abdominal section,

which was performed the same day. At the operation a large pelvic hæmatocele was found, limited above by coils of intestine, and covered in below by omentum. These were carefully separated and the thin cyst wall opened; about 2 litres of clot and dark chocolate-colour blood escaped. The cyst was composed of several loculi, one of which contained blood, fæcal in odour. The uterus was healthy, but the left Fallopian tube appeared to be thicker than the right. The operator purposely desisted from making a thorough examination owing to the gravity of the patient's condition. Drainage, both vaginal and abdominal, was employed. A fæcal fistula developed two days after the operation which subsequently completely closed, and the patient was discharged well on July 15. On submitting the contents of the hæmatocele to examination, the *B. coli communis* was found in abundance. Seven months after discharge the patient remained in good health. The uterus was completely retroverted, and measured 8 cm.; it was replaced. The left adnexa were prolapsed, thickened, painless, and quite movable. The right adnexa appeared normal.

In commenting on the case, Doléris suggests that the hæmatocele might have been due to the rupture of a left tubal gestation, or of some pelvic bloodvessel, and excludes the possibility of a rupture of the uterus from whatever cause. H. P.

The Question of the Induction of Premature Labour and Embryotomy in Cases of Contracted Pelvis (P. BAR: *L'Obstétrique*, March, 1902).—The treatment of dystocia caused by pelvic contraction has reached a critical period in its history. The low mortality of Cæsarean section, and to some extent the re-introduction of symphysiotomy, have altered the views of obstetricians upon this subject. At the same time, improvements in technique have improved the results obtained by forceps and version. The induction of premature labour, and embryotomy of a living child, are considered by many authorities to be rarely, if ever, justifiable procedures. Pinard, in a recent paper entitled 'Fœticide' (*La Semaine Médicale*, December 4, 1901), maintains that it should be the object of every obstetrician to bring each pregnancy to term, and to effect delivery with a minimum of traumatism to the mother and the child, and that this view excludes, in cases of contracted pelvis, the induction of premature labour, and embryotomy of a living child. The mortality of the former is, in his extensive experience, 30 per cent. for the infants, and many of the survivors possess only feeble vitality, and rarely develop into healthy individuals. Embryotomy is, in his opinion, an 'opprobrium to obstetric science,' and at the present time is absolutely unjustifiable. Paul Bar, in this paper, takes the view that these dogmatic statements are not altogether justified by the facts, and brings forward considerable evidence to prove his con-

tention. The objections to the induction of premature labour are mainly three:

1. *The mortality of* 30 *per cent. in the children.* Bar's death-rate is 25 in 100 cases. The factor which dominates this question is the degree of contraction present, and consequently the period at which it is necessary to induce labour. The following figures illustrate this: In pelves with a conjugate of 6 to 7 cm. the mortality is 80 per cent.; conjugate 7 to 8 cm., 53 per cent.; conjugate 8 to 9 cm., 12 per cent.; conjugate 9 to 10 cm., 8·6 per cent.; whilst in pelves over 10 cm. (4 inches) the mortality is practically nil. We may conclude, therefore, that in pelves below 8 cm. (3·2 inches) the operation should be rejected. Excellent results may, however, be obtained in pelves with a conjugate of 9 cm. or more.

2. *Feeble vitality.* This is due to incomplete development of the child, and is hardly noticeable if the cases be selected with a conjugate of over 8·5 cm. The average weight of these infants will be 2,500 grm., and they survive without difficulty.

3. *The relative safety of Cæsarean section and symphysiotomy.* These, however, are still serious operations, involving real risk to the mother's life, in spite of all improvements in technique.

Bar concludes that within the limits here laid down, the induction of premature labour is the operation of choice, and in no way violates the moral responsibility of the obstetrician.' The precise time at which labour should be induced in any case must be decided by the relative disproportion between the size of the child's head and the capacity of the pelvis.

The question of craniotomy of the living child is next discussed. The alternatives are Cæsarean section and symphysiotomy. The former, if performed early in labour on a healthy woman, and by a skilful operator, with the aid of all modern improvements in technique, gives good results, but still remains a serious operation. The question of embryotomy usually arises when labour has been continuing for some hours; the membranes are ruptured, and the child's vitality is impaired. Sometimes, also, attempts at forceps extraction have been made, and have failed. Under these circumstances Cæsarean section exposes the mother to grave risks, whilst the child's life is already compromised. Symphysiotomy may be performed, provided always that no signs of infection are present. If there is any evidence of infection, or if the child's vitality is impaired, as shown by rapid and feeble heart-beats, escape of meconium, etc., an attempt may be made to deliver by forceps or version. If these fail, there should be no hesitation in performing embryotomy of the living child. Symphysiotomy must be rigidly excluded if there is any sign of maternal infection, such as pyrexia, quick pulse, or fœtid amniotic fluid. With these limitations Bar has

performed symphysiotomy twenty-five times. All the mothers and infants survived. It will be remembered that Pinard's mortality for symphysiotomy has been 10 to 12 per cent., both for mothers and infants. Bar believes that this is accounted for by the fact that some of the women were exhausted or infected before the operation was performed. Cæsarean section and symphysiotomy can rarely be carried out in private practice. They are only justifiable if the patients can have all the advantages of asepsis and skilful operators. In the present state of the obstetric art this is not always possible, and hence embryotomy of the living child cannot be altogether abandoned in the interests of the mother. It is, however, the duty of all practitioners to realize their responsibility, and to recognise pelvic contraction during pregnancy, so that the difficulties likely to arise during labour may be foreseen and avoided. In this way the necessity for performing embryotomy on a living child will be very rare. A. W. W. L.

Concerning the Origin of Recto-Vaginal Lacerations in Spontaneous Delivery (KIEN, Strasburg: *Monats. für Geburts. und Gynäk.*, April, 1902).—Lacerations of the recto-vaginal septum without complete perineal laceration are very rare conditions, and comparatively few cases have been described. According to Hirsch, up to 1899 only five cases were on record. The author describes two cases in which he was able to watch very carefully the way in which such lacerations originate, as the tears were produced slowly and progressively, not suddenly, as no doubt sometimes occurs. The first case was a primipara, aged forty, with a vertex presentation in the first position. Apparently everything was progressing normally, and with strong pains the head came down on to the pelvic floor, and then made no progress for a time. The posterior portion of the pelvic floor stretched to such an extent that it was evident a severe laceration would occur. Therefore two lateral incisions (episiotomy) were made into the perineal body. Although these allowed the head to descend somewhat, they did not relieve the tension of the posterior portion of the pelvic floor. The rectal mucous membrane, which was visible to the extent of 4 or 5 cm. vertically, now ruptured and exposed the muscular wall of the rectum for a space measuring 4 by 3 cm. With the next pain the muscular wall gave way, in spite of all usual manipulations to prevent rupture, laying bare the fibres of the levator ani attached to the perineal body, and tearing for 2 cm. through the perineal skin, and superficially tearing the sphincter. Through this opening came a great gush of liquor amnii. Next the head of the child was suddenly delivered through the vulva without any further tear of the perineum or vagina. Thus, it will be seen that the perineal body was only very slightly

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torn from *behind* forwards, while the recto-vaginal septum was lacerated to such an extent as to admit three fingers. The tears were carefully sutured with catgut, and very good healing took place. The explanation of such an unusual tear seems to lie in the strongly developed perineal muscles, in connection with a rigid vaginal wall in an elderly primipara. The result of this rigidity of vagina and muscles is that the pressure of the head forcibly stretches the upper part of the recto-vaginal septum, drives it backwards and downwards, and opens out the anus widely without distending the perineum proper at all. The tear proceeds from without inwards, because the vaginal mucous membrane is more distensible than the rectal, and so the latter tears first.

In the second case, a primipara, aged twenty-one, with vertex presentation in the second position, a similar laceration resulted, but the vaginal mucous membrane and muscular structures were not torn through. The rectal mucous membrane ruptured when stretched to its utmost, and the tear ran forwards through part of the sphincter ani into the perineum; but the vulval outlet was untorn, and most of the perineal body was intact.

The explanation that these lacerations arise through fixation of the vaginal outlet, owing to muscular rigidity and unyielding connective tissue, is similar to the one given by H. W. Freund for rupture of the uterus. The latter occurrence is favoured by fixation of the lower uterine segment either between the presenting part and the pelvic walls, or by some pre-existing disease which has produced actual rigidity of the lower uterine segment and the tissues around it. These lacerations must be carefully distinguished from the 'central laceration of the perineum' where the tear occurs in, and the child is born through, the stretched perineal body. These cases are extremely interesting, because they help to show that perhaps, in some cases of complete perineo-recto-vaginal tears, the laceration may commence in the rectal mucous membrane as above, and then extend forwards completely through the perineal body. However, owing to the suddenness with which these lacerations occur, this sequence of events may not have been observed. T. G. S.

Arendt's Method of arresting Post-partum Hæmorrhage due to Uterine Inertia (GIROLAMO PIRETTI: *Archivio di Ostet. e Ginecol.*, ix., 193, March, 1902).—Piretti reports a case of post-partum hæmorrhage due to uterine inertia, in which Arendt's method of arresting the loss of blood was put into play. The method consists in grasping the anterior and posterior lips of the cervix with two pairs of Martin's catch forceps, and in dragging the uterus downwards in the vagina till the os is near to the vulva. This plan Piretti followed, and, as Arendt recommends, he kept

up the traction for some time, and renewed it when the uterus relaxed and bleeding recommenced; but, since the hæmorrhage persisted, he ultimately gave an intra-uterine hot-water injection and a vigorous massaging of the uterus. So it would seem that the manœuvre does not always succeed in permanently arresting the bleeding. It has, however, the advantage of temporarily doing so, and of, at the same time, bringing the cervix within range of sight, and of repair by sutures if need be. Further, it can be done very rapidly, and, if it should be necessary afterwards to plug the uterine cavity, the first step in the process has already been carried out.

J. W. B.

Treatment of Acute Puerperal Sepsis from a Surgical Standpoint (HIRAM N. VINEBERG, M.D., New York: *The Medical News*, vol. lxxx., No. 14).—The author points out that the surgical treatment of conditions arising from sepsis during the puerperium still forms a vexed question. Whilst some hold that surgery finds no legitimate field in puerperal sepsis apart from curettage in selected cases, and the opening of purulent collections without entering the general peritoneal cavity, others lay great stress upon the question as to whether or not there is general infection, maintaining that when general infection exists surgical intervention is worse than useless. The author says he has always failed to understand why sepsis originating during the puerperium should be treated on principles different from those followed at other times, or to comprehend the attitude of those operators who, not hesitating to remove the uterus for chronic metritis, oppose hysterectomy for acute puerperal sepsis. He lays special stress on the following points:

1. Every case of puerperal sepsis is wound-fever or wound-infection, and should be treated on the general surgical principles applying to wound-infection elsewhere.

2. Each case of puerperal sepsis, no matter how slight, should be carefully observed and watched from the outset, for we can never tell whether such a case may not develop into a serious infection, which will be a menace to life.

3. When a case of uterine sepsis progresses unfavourably after curettage, irrigation, and proper general treatment, we are justified in removing the uterus, unless, after opening the abdomen, we find some condition outside the uterus to account for the persistence of the sepsis, or some condition in the uterus itself, such as a single intramural abscess or a localized gangrene, which would admit of removal without ablation of the whole organ, as in cases reported by Hirst and the author.

4. When a uterine infection extends to the tube or ovary, setting up acute salpingitis or ovarian abscess, the abdomen should be opened without delay and the affected tube or ovary removed.

5. When a uterine infection sets up septic peritonitis, the abdomen should be opened and the uterus ablated, the peritoneal cavity flushed with saline solution, and free drainage employed through the vaginal opening.

6. To operate for these conditions when the patient is evidently moribund is unjustifiable, and can serve only to bring discredit upon the operation. C. B.

Purulent Ophthalmia in the New-born: its Cause and Prophylaxis (FERNAND THOMIN: *Rev. Prat. d'Obstét. et de Pædiat.*, March and April, 1902, p. 91).—About a third of all cases of blindness are caused by purulent ophthalmia in the infant. Clinical experience, long before bacteriology, pointed out the association between vaginal discharges, especially gonorrhœal ones, and purulent ophthalmia. As early as 1807 Gibson called attention to the frequency of this condition in children born of women with "whites"; and to prevent it he formulated these rules:

1. Try to get rid of the "whites" during pregnancy.

2. If this is not done, remove the discharge from the vagina during accouchement.

3. Immediately after birth apply to the eyes some lotion capable of neutralizing the pernicious effect of the secretion upon the eyes.

In 1879 Neisser discovered the organism of gonorrhœa, and found it not only in the urethra and vagina, but also in the purulent affections of the eyes in the new-born. But the gonococcus is not the only organism found in purulent ophthalmia in the new-born. The writer has examined 25 cases bacteriologically, and has found:

The gonococcus alone in 13 cases, or 52 per cent.
The gonococcus with the streptococcus in 2 cases, or 8 per cent.
The gonococcus with the staphylococcus in 2 cases, or 8 per cent.
The streptococcus in 2 cases, or 8 per cent.
The staphylococcus in 3 cases, or 12 per cent.
The Week's bacillus in 2 cases, or 8 per cent.
Various micrococci in 1 case, or 4 per cent.

Other observers have found, besides these, the pneumococcus, and the bacillus of Löffler.

The method of infection is that some of the vaginal discharge containing the organism gets into the eye during parturition, or accumulates round the eyelashes or on the borders of the eyelids, and thence finds entrance when the child opens the eye or is washed. Or the child may become infected before it leaves the uterus by the finger of the accoucheur. The ophthalmia usually develops during the first five days after birth, the different modes of infection explaining the different dates at which it is noticed. The child may be born healthy and be infected after birth through the air, water, toilet articles, clothing, or nurse. In this case the disease is not

seen until after the fifth day of extra-uterine life, and is called secondary to distinguish it from the first or primary form.

Prophylaxis is the best means of combating the disease. To this end, one should seek to attain asepsis of the genital tract in every pregnant woman by frequent vulvar toilets and by antiseptic vaginal injections. The eyes of the child should be washed out with an antiseptic solution immediately after birth. In Crédé's hands vaginal injections of carbolic solution, in every case of pregnancy or labour, together with the instillation of a 1-50 solution of silver nitrate into the child's eyes, reduced the proportion of ophthalmia from 8 or 9 per cent. to ½ per cent. But a solution of silver nitrate has disadvantages. It may damage the cornea, cause pain, stimulate the conjunctiva too much, and even set up an inflammatory reaction. Other solutions may therefore be employed, *e.g.*: Carbolic lotion (1-100); perchloride of mercury (1-5,000); boric lotion (3 or 4 per cent.); citric acid, permanganate of potash, or iodoform powder (5-100); aniodol (1-4,000).

To insure success these remedies must be employed immediately after birth. Olshausen and Fürst have shown that ophthalmia diminishes by one half if the eyes are attended to at once.

To sum up, the writer accepts the conclusions of Pinard, viz., that—

1. There are several varieties of infectious and contagious ophthalmia.

2. Though *ophthalmia neonatorum* is most often caused by the gonococcus, it may be caused by other organisms.

3. The head of the child should not be washed in the water in which it has been cleansed after birth.

4. The asepticity of all articles which are brought into contact with the child's face or eyes should be secured, to prevent the development of secondary ophthalmia.

5. The aim should be to secure asepsis of the genital tract before parturition, and of the eyes at the moment of birth, and for the first three weeks of extra-uterine life. R. W. McK.

On the Mortality in France of Children under One Year of Age.—P. Budin (*L'Obstétrique*, September, 1901) contributes a report to the Acad. de Médecine, on a memoir by M. Balestre and the late M. Gilletta. This paper gives the number of deaths of infants to total deaths of population, but does not give the percentage of deaths to births. In Paris the deaths are 145 per 1,000 total deaths, running up to over 500 at Saint-Pol-sur-Mer. Of 1,000 infantile deaths, nearly 400 are from diarrhœa. This is a preventable disease, as the dispensaries show which have been established in Paris and the provinces. The question of the depopulation of France is not to be solved by increasing the birth-rate, but

in stopping the death-rate of infants. France from preventable disease in infants annually loses an army corps. E. H. L. O.

The Microscopical Recognition of the Penetration of Alcohol into the Skin in Disinfection by Hot Water and Alcohol (A. RIELÄNDER: *Zeitsch. für Geburts. u. Gynäk.*, Bd. xlvii., Ht. 1, p. 4).—In the discussion on the possibility or otherwise of rendering the skin of the hands free from germs by the use of methods of disinfection that are practicable, Ahlfeld is one of the chief exponents of the positive side of the question. Ahlfeld is able, by the use of scrubbing with hot water and soap, and afterwards with alcohol, not only himself to render his hands sterile, but to teach his nurses with certainty to make theirs so.

On the negative side are Döderlein and others, and amongst the arguments employed to disprove the possibility of rendering the hands aseptic is one that alcohol hardens the superficial layers of the epidermis, and so is unable to penetrate into the deeper layers of the skin. To test this, point Rieländer has carried out a series of experiments to determine the depth to which the alcohol penetrates. He first employed colouring matters, but found them unsuitable for his purpose, inasmuch as the colour was apt to become further diffused in the course of preparation of specimens for the microscope. Better results were obtained by the use of a solution in alcohol of corrosive sublimate or acetate of lead, from which an insoluble precipitate was thrown down by the subsequent action of ammonium sulphide. Finally, it was found that the best results could be obtained by using a 10 to 20 per cent. watery solution of ferrocyanide of potassium.

After trying this method on dead skin, Rieländer made an experiment with it on a portion of skin on the back of his own forearm; this was well scrubbed in the usual way with soap and hot water by means of a brush, and was then rubbed for five minutes with the 20 per cent. solution of copper nitrate in alcohol; finally, after being acted upon for ten minutes by the 10 per cent. ferrocyanide solution, a small portion of the skin was excised, hardened in formalin and alcohol, and after embedding in celloidin was cut into serial sections. Examination then showed that in most places the precipitated ferrocyanide of copper had not only completely pervaded the epidermis, but that it extended as a reddish precipitate deeply into the connective tissue. The precipitate had, as a rule, completely permeated the sebaceous glands and their surrounding tissues, but had often failed to reach the sweat glands and their immediate neighbourhood. It was remarkable, moreover, that the skin itself had not been regularly and equally penetrated by the fluids; some portions were completely free from the precipitate, which in other parts close by, had extended well into the connective

tissue. The experiment was repeated on a living guinea-pig, and a piece of skin from this animal gave similar appearances to that found in the human skin. Rieländer is unable to find an explanation for the unequal distribution, but thinks it must be referred to some peculiarity in the precipitation of the ferrocyanide, since when he used corrosive sublimate and ammonium sulphide the precipitate of mercuric sulphide was equally distributed through all the sections.

Reference is made to the observations of Hägler on the localization of the bacteria in skin artificially infected; these showed that germs on the hands are found in the sebaceous glands only in small numbers and in the peripheral parts; that they are usually absent in the sweat glands; that in all the natural openings of the skin they do not multiply, but merely gain their entrance from without, and that, once there, under normal circumstances they do not increase, but are cast off by the secretions. In accidental openings of the skin, such as small cracks or fissures, germs are, on the other hand, regularly observed, and appear to multiply freely. A comparison of his results as regards the penetration of alcohol with these observations of Hägler on the distribution of germs in the skin, leads Rieländer to conclude that in the hot-water and alcohol method of disinfection of the skin, the degree of penetration of the spirit is sufficient to bring about complete asepsis.

T. W.

GYNÆCOLOGY.

Myoma and Heart (L. KESSLER: *Zeitsch. für Geburts. u. Gynäk.*, Bd. xlvii, Ht. 1, p. 77).—The sudden death of a patient, fifty-four years old, from whom a myoma weighing 60 pounds had been removed, forms the text of this paper. The tumour had been growing for at least seven years, had contracted numerous adhesions, and in its upper part contained several cystic cavities; much of its nutrition had been obtained from greatly enlarged vessels running in the omentum. The tumour had not given rise to hæmorrhages, and the menopause was long past. After a severe and anxious operation the patient appeared to be doing perfectly well until the seventh day, when she was allowed by the nurse, contrary to orders, to sit up in bed; no sooner had she done so than she fell back dead. At the autopsy careful examination of the heart was made, and the appearances characteristic of myo-fibrosis were found, especially in the walls of the auricles and of the much-hypertrophied left ventricle. A careful search was made in vain for some other cause of sudden death, special attention being directed to the possibility of embolism.

The cardiac degeneration in this case appears to have been chiefly due to the enormous size of the tumour. The author refers to observations that have been made by others, and especially to those of Strassmann and Lehmann, who found, in a series of seventy-one cases of myoma, that some affection of the heart was present in 40·8 per cent. It has been generally held that the cardiac affection depends upon the bleeding caused by the fibroids, which leads to insufficient nutrition, and so to fatty degeneration and atrophy. Against this view Brosin raised the objection that in carcinoma, even though bleeding lasted for years and led to intense anæmia, it still left the patient a remarkably strong heart. Bleeding can thus not bear the blame for the cardiac degeneration which is 'typical only for myoma,' in which it often appears at a time when the tumour is still small and the general condition of the patient good.

The dependence of disease of the heart upon the growth of fibroids is a fact of great practical importance. In cases of uterine myoma a watch should be kept upon the condition of the heart, and any indications that this organ is becoming injuriously affected must be held to call for the radical treatment of the uterine tumour. This was the position taken up by the present reviewer in a paper based on several cases of uterine myoma with coexisting heart disease, read at the Obstetrical Society of London on May 2, 1900 (Obstetrical Transactions, vol. xlii.). T. W.

Hypertrophic Elongation of the Vaginal Portion of the Cervix Uteri (ALESSANDRO BERTINO: *Archivio di Ostet. e Ginecol.*, March, 1902). — Bertino has described with great care and detail four cases of hypertrophic elongation of the cervix, and has summarized the literature of the subject. He is of opinion that, in all the cases in which the hypertrophy is limited to the vaginal portion, the connective tissue is that which is most affected, although the glandular and vascular structures may participate, but not the muscular. When, however, the hypertrophy extends to the intermediate and supravaginal portions, although the connective tissue is still that most affected, the muscular may also be involved. This latter form has been described as a mixed type.

J. W. B.

Remarks on the Treatment of Inflammatory Affections of the Pelvis by Bodily Posture combined with Pressure (L. PINCUS: *Volkmann's Samml. Klin. Vortr.*, No. 332).—The author speaks of this mode of treatment as representing a definite method to which a special place will have to be given in the treatment of chronic pelvic affections. He calls it the weight-posture treatment (*Belastungslagerung*). It is based on scientific principles, and has already proved very useful in practice. It often succeeds where the other

methods for promoting absorption of inflammatory products in the pelvis fail, and where otherwise a serious operation would become unavoidable.

The separate factors which constitute the weight-posture treatment have been tried in practice for some years, so that it is not altogether a new proceeding. Aveling and Emmet recommended raising the pelvis in order to stop uterine hæmorrhage, and also to promote absorption of pelvic exudations. They did not employ pressure. Auvard used compression of the abdominal walls, as well as pressure from the vagina. But neither by weight alone nor by posture alone can we hope to obtain entirely satisfactory results; it is the suitable combination of both methods which leads to the best results in practice. The combined method has been tried in a number of cases in the clinics of Schauta, Freund, Olshausen, and others. The reports published from these show that appreciable results were obtained. Fritsch speaks of the weight-posture treatment in his new 'Manual on Gynæcology' as a method well deserving the attention of gynæcologists.

The characteristic features of this method are—(1) moderate elevation of the pelvis and of the lower extremities; (2) pressure exercised on the pelvic organs, as well as on the inflammatory exudations. The inclined plane necessary for raising the lower part of the body can easily be made by lifting the foot of the bed, and placing blocks of wood or bricks underneath. The elevation which is required in most cases is from 20 to 35 cm.; greater heights are not to be recommended. The raised position of the pelvis facilitates the return of the blood and lymph from the pelvic organs, which consequently become less congested and less painful. As the circulation becomes more active the vital powers of the anæmic patients improve, and thus absorption of the inflammatory products is promoted in an indirect way. There is also some traction on the existing adhesions, which gradually become thinned out. The second important factor in the treatment is pressure. It can be produced from the abdominal walls or from the vagina (external and internal pressure).

Both forms can be used simultaneously. In order to produce pressure from without, bags filled with shot, and weighing from 4 to 8 pounds, are placed on the abdomen. It is not advisable to employ external pressure by itself as a means of treatment, as the downward pressure on the pelvic organs might lead to increased congestion. This is prevented by using intravaginal pressure at the same time. An empty bag of iodoform gauze is introduced through a speculum into the vagina, while the patient is on the inclined plane; the bag is gradually filled with shot, then tied and pushed upwards, so that the string only remains visible. The weight does not exceed

2 pounds. The newest method consists in exercising pressure by means of mercury; the pressure is more uniform and more effective. The author devised an apparatus by means of which an indiarubber bag (colpeurynter) is filled with mercury; it is allowed to remain in the vagina from a few minutes to an hour. The mercury is then removed, and the bag is inflated with air instead. This air-pessary the patient can wear while walking about, so that it is suitable for out-patient treatment. Intravaginal pressure can also be produced by plugging the vagina with strips of some dry antiseptic material. The author goes on to say that pressure from the vagina proves very useful in those cases where the inflammatory products are situated in the lower portion of the pelvis—in parametritis, exudation in the pouch of Douglas, or when the ovaries and tubes are fixed low down in the pelvis. In perimetritis, on the other hand, or where the normally-situated uterine adnexa are concerned, intravaginal pressure alone can have very little effect, but if combined with compression of the abdominal walls by means of elastic bandages, shot, etc., it leads to gradual absorption of the inflammatory products.

Both modes of pressure can be used when the acute stage has passed, when the patient is entirely free from pain, and there is no rise of temperature. The author is of opinion that by means of the weight-posture treatment it will be possible to prevent exacerbations and recurrent attacks. It is often useful to combine this treatment with other methods (hot irrigation of the vagina, baths, plugs, etc.), especially when we have to deal with very hard masses in the pelvis which resist absorption (Schauta). Now and again it happens that the treatment has to be interrupted, and finally given up, in consequence of pain and rise of temperature. These are mostly cases where pus is forming. Suppuration must always be considered a clear indication for abandonment of the weight-posture treatment. Operative interference then becomes necessary.

According to the author, a rise of the temperature from half a degree to a degree above the normal is no contra-indication, but if there has been a considerable rise of temperature, then it is advisable to treat the patient for a time with hot douches, etc., and begin the treatment by weight and posture later on, when the condition has become chronic. In most cases it is sufficient to use the treatment during the night only; the patient need not be kept in bed during the day. Between the years 1886 and 1900 the author treated 299 cases of inflammatory pelvic affections by this method. In about 10 per cent. of the cases the treatment had to be abandoned in consequence of acute symptoms supervening. In most of the other cases the treatment proved satisfactory, though in some of them other methods had to be employed at the same time. The treatment occupied in each

individual from five days to about two months, and the author obtained the most striking results in cases of very hard pelvic exudations of old standing, which resisted other modes of treatment. Adhesions, on the other hand, are scarcely influenced by the weight-posture treatment. It also fails invariably when suppurative foci are present in the inflammatory masses. H. G. S.

A New Method of Fixation of the Bladder in Prolapse (CHIAVENTONE: *Annales de Gynéc. et d'Obstet.*, April, 1902, vol. lvii., p. 282).—The author points out that cystocele is a very common complication of prolapse, sometimes giving rise to serious trouble. Some cases can be relieved by palliative treatment; others require various operations, among which 'cystopexy,' as the author terms it, gives excellent results. Chiaventone gives in his paper a good account of the anatomy of the bladder and its surroundings in cases of prolapse, and points out that we have to deal with organs in the woman which, being part of the genito-urinary apparatus, are more or less constantly in a state of activity and transformation. Hence, operations destined for the cure of lesions of the pelvic organs rest on a basis different from that of the surgery of other parts of the body; for example, prolapse in an old woman can be treated by a definite occlusion of the vagina, while in a younger woman, in whom future pregnancies are probable, this would be unsuitable. In considering operative procedures, which route shall be chosen for the relief of cystocele—the vaginal or the abdominal?

The *vaginal* operations comprise complete occlusion of the vulvar opening, or median colporrhaphy, which transforms the vagina into two lateral canals, separated by a median *raphé*. Such operations are only suitable for certain cases, and the cure even then is not always complete. Anterior colporrhaphy is not a successful operation, and is unsuitable for the severer forms of cystocele.

With regard to the *abdominal* route, all operative methods must aim at maintaining the prolapsed bladder in its normal situation, and, as Chiaventone points out, in prolapse the chief part of the bladder affected is the base. In all cases there is descent of the pelvic floor, and weakening of the fascial planes, together with prolapse of the neck of the womb and vaginal walls. The abdominal methods of operating may of course be either intra- or extra-peritoneal, and up to the present time nearly all proposed operations have come under the latter heading. Thus, Tuffier fixes the bladder by an operation which diminishes the prevesical space behind the symphysis pubis. A second extraperitoneal operation, the method of Byford, consists in cutting down on the round ligaments and shortening them at the bottom of each inguinal canal. By this means the uterus and bladder are lifted upwards. The ureters, however, run some danger of being wounded in this operation.

The intraperitoneal methods have the advantage that they can be applied both to prolapse of the bladder and the uterus; *i.e.*, a cystopexy and a hysteropexy can be done at the same time. Some operators have turned their attention to the upper portion of the bladder, others to the posterior. Among these are Vlaccos and Dumont, Laroyenne and Kiriac.

Chiaventone maintains, from his anatomical studies of the condition, that in cystocele it is the *base* of the bladder that is all-important, not its superior or lateral walls; consequently, all operations that do not fix the prolapsed base of the bladder are useless. The author's operation aims, therefore, at this special point, and he chooses the abdominal intraperitoneal route because it enables him to fix the uterus up at the same time. The following are the details of Chiaventone's operation: The patient having been placed in the Trendelenburg position, the abdomen is opened by a median incision, and the uterus lifted upwards. The vesico-uterine cul-de-sac is seized and held up by two dissecting forceps, and this transverse fold is then incised. Two peritoneal flaps are thus formed, which are gradually detached by the fingers, one upwards from the cervix and anterior uterine wall, the other from the posterior wall of the bladder. The latter fold is now further detached, and the posterior wall of the bladder gradually loosened from its attachment to the cervix and anterior wall of the vagina. At length a part is reached where the connective tissue becomes much firmer. This corresponds to the interureteral ligament, where the ureters enter the base of the bladder. All sutures must be placed outside this particular area in order to escape the ureters themselves. The *base* of the bladder, which has now been denuded, is raised and stitched to the anterior surface of the uterus, 1 cm. above the anterior vaginal cul-de-sac. By this means the depth of the vesico-uterine cul-de-sac is reduced by two-thirds, the base of the bladder is lifted up, and fixed to the uterus, which in its turn finds a *point d'appui* upon the abdominal walls, to which it is fixed by hysteropexy. The separated vesico-uterine folds are now sutured, and the abdomen closed in the ordinary way. C. H. R.

The Treatment of Vesico-Vaginal and Recto-Vaginal Fistulæ high up in the Vagina (HOWARD A. KELLY, M.D.: *Bulletin of Johns Hopkins Hospital*, April, 1902).—When, in the course of vaginal hysterectomy for carcinoma of the cervix, the bladder is wounded—either accidentally or with intention—the resulting fistula is often difficult to close. The difficulty arises partly from the distance of the fistula from the vaginal orifice, and partly from the close proximity of scar tissue in the vaginal vault. These difficulties can best be overcome by opening the peritoneal cavity widely from side to side through the vaginal roof; when this has been done, the

bladder can be separated from adjacent structures, and brought within easy reach.

For the performance of this operation the patient is placed in the genu-pectoral posture. The advantages of this position are:

1. The bladder becomes spontaneously distended with air through the fistulous opening.

2. Blood, which may escape, runs down into this viscus and does not obscure the field of operation.

3. When incised, the vesical and vaginal tissues tend to fall away from one another in different planes.

The peritoneum is first opened widely from side to side, by cutting through the scar in the vaginal vault. Air enters the abdominal cavity, and the viscera fall towards the diaphragm. A gauze pad, attached to a stout thread, is now introduced through the incision. By pulling upon this thread, the bladder may be drawn down towards the vaginal orifice, whilst at the same time the peritoneal cavity is protected. The tissues at the margin of the fistula are split, the vaginal and vesical walls being separated from one another. The edges of the bladder wall are united by catgut sutures, the stitches passing only through the muscular coat; in this way a little buttress of vesical tissue is turned up into the bladder.

The vaginal surfaces are also united by a row of fine silkworm gut sutures; these may be continued up to the peritoneal surface of the bladder, thus securely closing the upper part of the fistula, which under previous methods of treatment was least likely to heal. When the fistula has thus been closed, the pad of gauze is withdrawn, and the peritoneal cavity filled up with saline solution to expel the air. The patient is then turned into the dorsal position and the fluid escapes. The vaginal wound is partially closed, a gauze drain inserted, and a catheter left in the urethra for from seven to nine days.

The same method may be adopted in cases of recto-vaginal fistula. Douglas's pouch is widely opened through the posterior vaginal fornix; in this way the mobility of the bowel is greatly increased. The vagina is completely separated from the rectum, the latter infolded and sewn up separately in one or two layers. The vaginal wound over the bowel is not closed, but left to heal by granulation.

H. W.

Ureteral Anastomosis (MACKENRODT: *Zeitsch. für Geburts. u. Gynäk.*, Bd. xlvii., Ht. 1, p. 126).—At the Berlin Society for Midwifery and Gynæcology on December 13, 1901, Mackenrodt showed a preparation from a case in which he had performed anastomosis of the left ureter in the course of an abdominal radical operation for ovarian cancer two years previously. The resected ureter had been

repaired by bringing the two ends together, invaginating the upper end into the lower, and suturing. The patient lived for two years after the operation, and finally died of pneumonia. At the autopsy numerous metastases were found in the peritoneum, in the liver, and in the lungs. At the place where the ureter had been united by invagination there was a narrowing, above which lay numerous calculi; above the narrow portion the ureter was dilated; the kidney was smaller than the right one, and its pelvis was dilated. Mackenrodt concludes that the invagination method ought only to be used in case of necessity, since it gives rise to a narrowing of the tube, and predisposes to pyelo-nephritis. The implantation of the ureter into the bladder, even when the stump of the ureter is comparatively short, is the better operation. This fact is illustrated by another case in which Mackenrodt, in the course of a retroperitoneal removal of the cancerous uterus along with the pelvic glands, cut through the right ureter 5 cm. above the infundibulo-pelvic ligament. At the close of the operation the ureter was invaginated into the most convenient portion of the bladder, and fastened there by two deep sutures; the surrounding bladder was then turned back over the wall of the ureter like a cuff, and secured by superficial sutures. The patient made a smooth recovery. T. W.

A Contribution to the Question as to the Occurrence of Decidual Changes in Uterine Polypi during Pregnancy (STOLPER, Vienna: *Monats. für Geburts. und Gynäk.*, April, 1902).—The author describes the histology of a polypus removed from a patient who first presented herself for examination with regard to a suspected pregnancy. She had had two months amenorrhœa, but no other obvious sign of pregnancy except some enlargement of the retroverted uterus. Two previous pregnancies had ended in abortion. The uterus was about the size of a six-weeks pregnancy, and of about the usual characteristic consistence. Projecting from the os uteri was a small pedunculated tumour the size of a bean. This was carefully removed with forceps, and although the os admitted the finger, the place of origin of the polypus could not be felt. Sections showed the following characteristics: The outline of the tumour was lobed, covered here and there with remnants of epithelium, protoplasmic in appearance, with nuclei, but badly-marked cell outlines. Where there was no epithelium the tumour was covered with fibrin and necrotic tissue. The bulk of the tumour had the characters of a decidua; it consisted of round or polyhedral cells with large clear, deeply-staining nuclei, and for the most part the cells were close together. Here and there they were more widely separated, and were spindle-shaped with thread-like processes. Masses of small round cells were found in places, and here and there large blood spaces,

sometimes bounded only by decidual cells, sometimes, however, by a well-marked endothelium. In the deeper parts of the tumour were glandular spaces, lined by cubical epithelium, parallel to each other and to the long axis. Thus, the tumour had the typical characters of a decidua, presenting a spongy and compact portion. How is such a formation to be explained? It may possibly have been a decidual transformation of a pre-existing polypus of the cervix or lower segment of the uterus, owing to a co-existent pregnancy, or possibly a process of a true uterine decidua. The later history of the case showed that the patient was pregnant, for at about the end of the third month an abortion occurred, and the ovum was manually extracted. The placenta did not lie near the internal os, and the want of chorionic villi in the tumour showed that it could not have been an outlying process of the placenta. The fact that the internal os was firmly closed at the time the tumour was removed seemed to prove that it grew from the cervix, and not from the lower uterine segment. In the literature of the subject no similar case could be found, and no facts concerning the behaviour of polypi during pregnancy seem to have been reported. Virchow first described the disease '*endometritis deciduæ polyposa*,' in which small polypoid growths appear on the surface of a previously deformed decidua. But this disease presents no similarities with the present case. Several authors—namely, Küstner, Klotz, Maier and Hitschmann describe cases in which tumours having the characters of a decidua without chorionic villi, were removed from uteri after abortions or previous hæmorrhages. But in these there was no evidence to show that the tumours developed before pregnancy terminated. It has been denied that true decidual formation occurs in the cervical canal, but Keilmann, Weiss, Ponfick, von Franqué, and Waldstein have demonstrated decidual formations and placental developments in the cervix itself. Taking all the evidence into consideration, it seems possible that a mucous polypus of the cervix might under the stimulus of pregnancy undergo a decidual transformation, and the author believes that his specimen originated in that way. T. G. S.

A Contribution to the Etiology of Deciduoma Malignum (AUSTERLITZ, Prague: *Monats. für Geburts. und Gynäk.*, April, 1902).—The various opinions as to the origin of the so-called deciduoma malignum which have been given out since Sänger first described the growth in 1888 make it always worth while to describe carefully any new cases which occur. Practically the only point in connection with this condition upon which all are agreed is that it must follow pregnancy, and it does not matter whether the pregnancy ends as an abortion, or a vesicular mole, or goes to full

time. Sänger gave it as his opinion that the growth originated in the decidual cells produced from the uterine mucosa under the stimulus of pregnancy, and therefore named it 'deciduoma malignum.' Also, in reviewing the published cases in 1893, Sänger divided them into those which contained obvious fœtal elements and those which did not. Gottschalk and Schmorl about the same time described the tumour as arising from the chorionic villi, and the latter coined a new name, '*blastoma deciduo-chorion cellulare*.' In 1895 Marchand sought to place the origin of the growth in a new light by assigning to the syncytial and Langhans' layers of the chorionic villi the chief part in its origination, and at the same time gave it as his opinion that the syncytium was altered uterine epithelium, and therefore maternal in origin, while he looked upon Langhans' layer as fœtal ectoderm. No certain knowiedge is yet to hand concerning the origin of these two layers, but the later German authorities—Aschoff, Gebhard, Runge, Neumann, Fränkel, and Pick—incline towards Marchand's views. Sänger himself agreed in general with Marchand's views, with the reservation that the possibility of sarcoma cells arising from the decidua could not be overlooked. On the other hand, Menge and Winkler still regard the decidua as the only origin of the tumour. Kossmann and Freund hold that the tumour arises from the syncytium, but differ as to the origin of the latter. Von Franqué agrees with Marchand's views with the exception that he believes the syncytium is of ectodermal, the Langhans' layer of mesodermal, origin. Reinicke looks upon the growth as a sarcoma arising in the uterine muscle, coexistent with an accidental pregnancy. Veit looks upon the growth as a pre-existent sarcoma, which under the influence of pregnancy undergoes syncytial transformation. Latterly most observers incline to Marchand's views, but are divided not only on the origin of the syncytium, but also on that of the so-called 'wandering cells,' and the part played by the stroma of the villi. It is of importance to note that four cases have been described where metastases like deciduoma malignum have been found, while no disease could be demonstrated in the uterus.

The author's case was as follows: The patient, aged twenty-three, had an abortion six months previously, and had bled constantly since. The bleeding, at first small in amount, afterwards became much greater, and was accompanied by cramping pains. On examination the uterus was found anteverted, the size of a fist, soft, and sensitive to pressure. As a curette easily passed in through the cervix, a piece of tissue was removed for examination. Although this showed decidual cells and other more deeply staining elongated cells mixed together, and was suggestive of deciduoma malignum, the clinical signs did not point to a malignant growth. So, the

bleeding having ceased, the patient was sent home, on the understanding that she was to return if further bleeding occurred. Three months later, the bleeding having recurred, the patient came back. After curettage, the pieces removed showed protoplasmic masses, with many nuclei imbedded in fibrin and blood-clot, with here and there groups of clear polyhedral cells with clear, round, not so deeply staining nuclei. This was obviously deciduoma malignum. The uterus was removed by vaginal hysterectomy, with good immediate result, but death took place four months later. No post-mortem examination was permitted, so it is not known if any secondary growths occurred. On cutting open the uterus, it was found almost filled by a dirty, greyish-blue growth, with the exception of the cervical portion. Sections from the growth showed necrotic muscular bundles, among which were groups of two kinds of cells. The one kind were small, polyhedral, sharply-outlined cells, with clear, delicately granular nuclei, gathered into small groups, which were surrounded and separated from one another by protoplasmic bands, in which were numerous darkly staining nuclei. The arrangement of these two kinds of cells suggested at once that they were derived from the two layers of the chorionic villi, and from the way they penetrated the muscular bundles were evidently showing very malignant characters. Here and there among the muscles groups of cells were to be seen which conformed neither to one type nor the other. Many of these had numerous nuclei, and had the appearance of the so-called 'syncytial wandering cells.' In places wedge-like masses of growth were seen projecting into enlarged blood-spaces, apparently covered by endothelium derived from the lining of the bloodvessel. Also these endothelial-covered, wedge-like masses sometimes lay free, the original blood-spaces having been burst asunder and their walls changed into necrotic masses of blood fibrin and muscular fibres. All these appearances produce most puzzling histological details, but it is not easy to see how the view of Veit can be accepted, that these cells are those of a pre-existing sarcoma undergoing syncytial changes under the influence of pregnancy. The great similarity of these wandering cells with those of the original groups, which cannot be mistaken as proliferated chorionic epithelial layers, seems to point to their having a similar origin. T. G. S.

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REPORTS OF SOCIETIES.

OBSTETRICAL SOCIETY OF LONDON.

Wednesday, May 7, 1902, PETER HORROCKS, M.D., President, in the Chair.

Dr. JOHN S. FAIRBAIRN read a paper on **Five Specimens of Fibroid Tumour of the Ovary, with Observations on their Pathological Anatomy.** Attention was first directed to the descriptions of these growths as given in the text-books and monographs on the subject. The general statement was that these tumours were formed by hyperplasia of the whole stroma, so that the organ was converted into a hard tumour retaining more or less the original shape of the ovary. Five specimens, varying in size from a small growth the size of a hen's egg, up to a large tumour of over four pounds in weight, were described in detail. In all of them the new growth had arisen within the ovary, and affected only a portion of the stroma, leaving a considerable part of the organ as a separate and easily recognisable structure.

After looking through a large number of recorded cases of fibroma and fibro-myoma of the ovary, some fifteen or sixteen were selected as similar to those described in the paper, and a short abstract of them was given. When such specimens had been shown at societies they had given rise to some discussion from the unusual persistence of a portion of the ovary. The number of instances quoted, together with the five specimens under review, was sufficient to show that the descriptions usually given were misleading.

While the difficulty of detecting unstriped muscle cells among fibrous tissue cells was acknowledged, the evidence of a comparative examination of sections from these tumours appeared to be in favour of their being considered fibromata. The sections provided a very good opportunity of contrasting the minute structure of the growth with the ovarian stroma from which they had originated; the results of such a study were adduced in favour of considering these firm hard growths of the ovary as simple fibromata, and not as fibro-sarcomata. The question of these tumours arising from a chronic oöphoritis was discussed very briefly, and the importance of the tunica albuginea in forming a strong covering to ovarian growths was pointed out.

Mr. ALBAN DORAN maintained that the three specimens which he exhibited that evening in relation to Dr Fairbairn's important paper implied that fibroma and myoma of the ovary were distinct diseases. The section of the large fibroma showed perfect wavy white fibre, as did the section of the little solitary fibroma not half an inch in diameter. The myoma, unlike the two fibromas, was closely related to the ovarian ligament, which included muscular tissue derived from the uterus. On section it showed plain muscle cells, precisely as seen in a section of a

myoma of the uterus. Œdematous fibroids were once taken for sarcomas of the ovary; subtracting these suspected malignant growths from the malignant solid tumours of the ovary, we should probably find that carcinoma of the ovary was much more common than sarcoma, as Martin had demonstrated, whilst fibroma, innocent even when looking malignant, was by no means rare.

Mr. Bland Sutton congratulated Dr. Fairbairn on establishing the fact that the encapsulation of the tumour could be relied upon as a generic and distinguishing feature. When the fibroid was of moderate size, as in the smallest specimen of his series, the disproportion between the ovary and the tumour was not so marked, but when the mass had a circumference of 20 or 30 cm. or more, then the small bud-like remnant of the ovary at the uterine end of the tumour appeared very incongruous. The leading features of these tumours could be summarized thus: encapsulation; ovoid shape; intense hardness; and the whorled disposition of the tissue as displayed on the cut surface. These were a group of signs presented by no other tumour of the ovary, and their clinical value was equal to their simplicity. There was an important feature by which ovarian fibroids were distinguished from similar tumours in the uterus. It was well established that uterine fibroids did not arise after the menopause, whereas ovarian fibroids occurred in the aged, and on two occasions Mr. Bland Sutton had successfully removed them at the ages of sixty-four and sixty-six, and the clinical histories indicated that the tumours had only been noticed two years before removal.

Dr. Briggs suggested that Dr. Fairbairn had shown a want of courage in selecting *fibroids*, and not *fibromata*, as the title of his paper. Mr. Alban Doran's specimen exhibited that night, if not actually a myoma, was the nearest approach in its microscopical characters to a myoma he had ever seen. The main danger had been, as Mr. Bland Sutton said, in ascribing malignant properties to cellular structures without adequate clinical proof. In Dr. Briggs' experience this impeachment was not limited to gynæcologists. The proof of the innocence of cellular growths, described as fibromata of the ovary, had been substantiated by Mr. Alban Doran and himself in the published paper referred to by Dr. Fairbairn. The rarity, as alleged, of fibromata of the ovary, was not justified by facts which had now accumulated. All his patients from whom he had removed these tumours still lived.

Dr. Herbert Spencer was surprised at the number of writers cited by the author who regarded ovarian fibroids as diffuse growths involving the whole of the ovarian tissue. His own experience was opposed to such a view, for out of five cases under his own care, in four the growth was very definitely limited to a portion of the ovary, and in the fifth (a large tumour) he thought possibly the tumour was so limited, but without spoiling the museum specimen by a series of thin sections, it was impossible to settle this point. Ovarian fibroids were certainly benign growths, and had much in common with uterine fibroids. The latter did not involve the whole tissue of the uterus, but sometimes displaced and com-

pressed it to a remarkable extent. It seemed to him most unlikely that such a benign fibroid growth would invade and destroy the whole of the tissue of the ovary, and, as a matter of fact, in the five cases alluded to, and in several others he had seen, it did not do so. A most interesting point in connection with these growths was their origin. Two of his cases suggested, and a third, he thought, clearly demonstrated the origin of an ovarian fibroid in the tunica fibrosa of a Graafian follicle.

The PRESIDENT pointed out that these tumours, and also sarcomatous and malignant tumours, generally differed from fibroids, in that the cut surface remained flat like a cut raw potato, whereas fibroids always became slightly convex on the cut surfaces after being incised, and this convexity gradually increased owing to the shrinking of the elastic and muscular fibres. He considered that it was of great importance to be able to say that a given tumour was a fibroma and innocent, or a sarcoma and malignant, and he hoped the work of Dr. Fairbairn would assist in this direction.

BRITISH GYNÆCOLOGICAL SOCIETY.

Meeting, Thursday, May 8, DR. HEYWOOD SMITH, *Vice-President, in the Chair.*

Dr. MACNAUGHTON-JONES related two cases of **Absence of the Genitalia**. (1) A girl of eight and a half years suffered from abdominal symptoms which led to recto-abdominal examination, when a soft sausage-shaped tumour was felt, but no uterus could be detected. On operation the tumour proved to be a sacculated sigmoid, doubled down on the rectum, and containing fæces, but the vermiform appendix, 6 inches long, was bound down to the floor of the pelvis and contained pus; there was no uterus or any adnexa. The appendix, which was ruptured in detaching it, was removed, and in spite of a fæcal discharge from the abdominal wound from the fifth to the eighth day, and an intercurrent attack of cystitis, the child made a good recovery. (2) A woman of thirty-two had had persistent primary amenorrhœa, with headaches and molimina, from the age of eighteen; sexual instincts seemed to be present as there had been a question of marriage, but the absence of the catamenia and uncertainty whether the marriage could take place had led to much mental depression and deterioration of health. The labia, clitoris and urethral orifice were present, but there was no vagina; and bimanual recto-abdominal and recto-vesical examination proved the absence of uterus, ovaries, and tubes, nor could any trace of such or of a vagina be found by exploratory incision in the middle line into the fibro-muscular tissue between the bladder and rectum.

Dr. BEDFORD FENWICK read a paper on **Fifty Laparotomies** which, with thirty-five simple operations for the removal of ovarian cysts or uterine fibroids, were the only cases in which he had opened the abdominal cavity from above during the last sixteen months. These fifty were all more or less difficult operations, and included the only fatal results he

had met with in his abdominal sections for nearly three years and a half: there were two deaths after hysterectomy for malignant disease and for degenerated fibroids of the uterus, both by a singular coincidence occurring in the first week of this month, but neither due, save indirectly, to the operation, the patients sinking from heart-failure several days thereafter. The frequency with which fatty degeneration was caused by abdominal tumours, to which he had drawn attention some fifteen years ago, seemed now to be generally admitted. The 50 operations included 24 for ovarian growths, of which 5 were malignant, the disease being removed in 3, but the others were too far advanced for extirpation; 14 for fibroid growths, in connection with which he laid much stress on the importance of degeneration as an indication for interference, and of pain in previously painless cases as a symptom of inflammatory change consequent on such degeneration; 6 for bilateral, and 3 for unilateral (left) pyosalpinx—all associated with great and increasing pain, profuse menorrhagia and marked loss of flesh and strength—and 1 each for malignant uterine disease, extra-uterine fœtation, and abdominal hernia.

Dr. MANSELL MOULLIN said that among 173 abdominal operations at the Hospital for Women, Soho Square, during last year, they had had only 8 deaths, of which 7 followed operations not properly gynæcological; 57 ovariotomies, 21 hysterectomies, and 5 myomectomies having been performed without any mortality, the single fatal case being 1 of 22 oöphorectomies. These figures showed the position of special gynæcological work at the present day, and would compare, not unfavourably, with the results of such work in general hospitals.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Meeting, Friday, April 18, 1902, DR. S. BUCKLEY, *President, in the Chair.*

Adenoma of the Uterus: Vaginal Hysterectomy.—Dr. WILLIAM WALTER (Manchester) related the case of a single woman, aged 39, who had complained of menorrhagia for some time, and for the last five months of almost constant bleeding. Curetting a few months previously had failed to relieve the condition; he therefore performed anterior colpotomy and incised the front wall of the cervix up to the inner os. On passing the finger into the uterine cavity a small soft growth was found attached to the fundus. The uterine incision was increased, and the growth which was brought into view presented a bright-red villous appearance. The uterus was accordingly extirpated. Microscopical sections exhibited the appearances of a simple adenoma. The patient made a good recovery.

Multiple Recurrent Polypi of the Uterus.—Dr. A. DONALD (Manchester) showed a uterus removed for recurrent multiple polypi. The patient was a widow, aged forty-seven, who had had two children, the youngest being seventeen years old. There had been much bleeding. Numerous polypi were found projecting from the cervical canal. The longest of these measured about an inch, and they all originated from the cervical canal just within the os externum. The polypi were removed

with scissors and the canal thoroughly curetted. About four or five months later the patient returned to the infirmary complaining of pain in the back and some vaginal discomfort, but no bleeding. On vaginal examination the conditions were found to be similar to those present on her first visit, but the polypi were more numerous and much larger, and almost completely filled the upper third of the vagina. The rapid recurrence of the growths denoted that the condition was clinically malignant, and the uterus was removed *per vaginam*. On opening it several polypi were found in the body of the uterus. The specimens were examined by Dr. W. E. Fothergill, who found that the tissue resembled that of ordinary uterine mucosa, but that it was somewhat more fibrous, and the glands were rather less abundant. The covering was that of a single layer of columnar epithelium, and the glands were also lined by a single layer. There was no appearance of malignancy, and the uterine muscular wall was not infiltrated.

Large Intraligamentous Fibroid containing Necrotic Cysts.—Dr. H. Briggs (Liverpool) removed this tumour from a single woman, aged forty-six, the indication for operation being rapid increase in growth with pain and pressure symptoms, including œdema of the legs. The mass was about the size of a seven months pregnant uterus. The uterus, which contained three small fibroids, was displaced upwards and to the left. The growth was enucleated from the broad ligament with great difficulty. The upper three-fourths of the ragged capsule was trimmed away, and after making a gauze drainage opening from the cavity into the vagina, the remaining peritoneal flaps were stitched closely across the pelvis, and the abdomen closed. The uterus itself was removed by Baer's operation. Dr. Briggs advocated this method of drainage in cases of densely matted growths in the broad ligament. The gauze was withdrawn gradually day by day. The older method of drainage by the abdominal wound was less satisfactory.

Extirpation of the Uterus for Cancer of the Cervix by the Paravaginal (Schuchardt's) Operation.—Dr. W. J. Sinclair (Manchester) described a case in which he had performed this operation. The disease was somewhat advanced, but seemed on the borderland for radical operation. There was some thickening in the parametric tissues on the left side, but the bladder was free and separable. Schuchardt's method allowed a larger accessibility to the disease by widely opening up the ischio-rectal fossa into the parametrium. It was possible to remove the mass felt on the left side without injuring the ureter, which was visible. The ovaries and tubes were removed. One or two sutures were placed in the centre of the peritoneal flaps to prevent prolapse of the intestine and the vagina was loosely packed. Dr. Sinclair thought that in cases where radical operation was justifiable, all that was possible or advisable to be done could be attained by this method. He did not favour prolonged abdominal dissections for cancer of the uterus.

Double Carcinoma Ovarii.—Dr. J. E. Gemmell (Liverpool) described this case, in which the diagnosis was obscure. The patient was a multipara, aged forty-five. An ovarian tumour had been diagnosed

seven years before. She had pain, floodings, and vomiting. A solid mass was felt in the right ovarian region, a small fibroid in the posterior uterine wall, the liver was enlarged, and there was much ascites. The patient had been drinking spirits freely for some time. Dr. Gemmell concluded from the marked enlargement of the liver and the history, that the ascites was probably due to cirrhosis, but the long history of the known presence of an ovarian tumour with dropsy, led him to think of fibroma or malignant tumour of the ovary. Finally, however, he made a diagnosis of uterine fibromyomata, with alcoholic cirrhosis and ascites. Exploratory abdominal section was performed, and on opening the abdomen a large quantity of blood-stained serum was evacuated; the tumour on the right side, which was adherent to omentum and bowel, was with difficulty removed; a similar tumour was removed from the left side, and a fibroid about the size of a Tangerine orange was enucleated from the posterior wall of the uterus. The ovarian tumours were mainly solid, but also contained some cystic portions. Malignant deposits were seen studding the intestines, omentum and liver. The patient was much relieved of her symptoms for a time, but died about twelve weeks after operation. The ovarian growths were carcinomatous.

Death from Uræmia after Ovariotomy.—Dr. Lloyd Roberts (Manchester) related the case of a multipara, aged fifty-eight, who had a large ovarian cyst. A good deal of albumen was present in the urine. The patient was kept in bed, a light diet enjoined, and a mixture of iron and sulphate of magnesia ordered. The quantity of albumen in the urine gradually diminished, until there was only a trace. In January, 1902, an abscess formed in the left axilla, and a little later she had tenderness in the left groin and swelling of the left foot and ankle. No thrombus could be felt. She recovered from these troubles, and on February 27 a multilocular ovarian tumour of the left side was removed. After the operation the patient passed little urine, and this contained much albumen. She became restless and sleepless. Two or three days after the operation vomiting came on, and continued more or less until the time of her death. During the last forty-eight hours of her life the patient passed only eight ounces of urine, loaded with albumen. She became unconscious, and died of uræmia on March 8, the tenth day after operation. The abdominal wound had healed by first intention. There were no evidences of peritonitis or septicæmia. *Post-mortem.*—There was double nephritis. The other organs were healthy.

EDINBURGH OBSTETRICAL SOCIETY.

Wednesday, May 14, 1902, Dr. James Ritchie, *President, in the Chair.*

Hydatid of the Ovary.—Professor Simpson showed a specimen of this rare disease. The tumour on removal was like an ordinary dermoid cyst, but on section it was found to be full of the typical hydatid cysts.

Professor Simpson referred to the rarity of the condition, and pointed out that only one or two similar specimens had been observed.

The Development of the Amnion and Cord.—Dr. Berry Hart read a paper on this subject. He discussed the current view on the origin of the amnion and cord as in the chick, and pointed out the difficulties in accepting it. He then referred to Peter's embryo, the earliest known, and a similar one in his own possession. From these specimens, with the assistance of the work of His, Selenka, Graf Spee, Keibel, Mall, and Minot, the development of the amnion was traced. He then advanced the opinion that the germ-layers in the human germinal area are inverted, as in the guinea-pig—*i.e.*, that the human amniotic cavity is not really formed by folds, but by the formation of an ectodermic plug with central breaking down.

Professor Simpson said that Dr. Hart's idea was a new one, and required to be thought out; but he could well believe that breaking down of early embryonic tissue did take place, and he was prepared to accept Dr. Hart's interpretation of the phenomena.

Dr. J. W. Ballantyne agreed with Dr. Hart that his explanation of the phenomena was a possible one. What took place in the chick did not necessarily occur in the human embryo, and the principle of tissue building up and breaking down seemed to hold good in the embryo. Hence there was nothing extraordinary in the idea of an epiblastic plug growing, and then breaking down again. Further, this view of Dr. Hart's helped to explain many teratological conditions—as, for example, a recent specimen he had seen, in which the hand was bound to the chest wall not by amniotic bands, but by a solid connection.

A Case of Acute Pyelitis in Infancy.—The President read a paper on this subject. The child, seven and a half months old, suffered from rigors, great variations in temperature, and discomfort on movement. The urine was very acid and contained pus and bacteria, but there was no frequency of, nor pain during, micturition. The President discussed the etiology of pyelitis, and said that in infancy the *Bacterium coli communis* might be the cause. The prognosis was favourable, and the object of treatment was to render the urine neutral.

Notes on the Symptoms and Treatment of Acute Pyelitis in Infants.—Dr. John Thomson read a paper on this subject. He pointed out the importance of examining the urine in all acute feverish conditions in infants. He then described eight cases of acute pyelitis which he had observed, and discussed the symptoms, cause, and treatment. He laid special stress on the occurrence of rigors, and held that no other condition induced rigors in a child under two years of age. The best treatment was the free administration of citrate of potash, antiseptics being not of much avail.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Meeting, Wednesday, March 12, 1902, DR. ROBERT JARDINE, *President, in the Chair.*

The Treatment of Abortion.—The President opened a discussion on this subject. He defined a complete abortion as being the expulsion before the end of the third month of all the uterine contents lying within the zone of separation of the decidual vera and serotina. Threatened abortion should be treated by absolute rest, and among the many drugs recommended he preferred opium and viburnum prunifolium. The treatment of inevitable abortion consisted in insuring the complete evacuation of all the uterine contents, the use of the finger being preferable to ovum forceps or the flushing curette. If hæmorrhage were free and the cervix closed, he advised tamponade, while ergot might be administered. The tampon was renewed in twelve hours and repeated if indicated. In cases demanding immediate attention he dilated the cervix and emptied the uterus with the finger. In incomplete abortion the retained portions should at once be removed by the finger, aided by the curette if required, but guarding against perforation of the uterus by this instrument. If such an accident occurred the uterus should be plugged with gauze. We should never trust to ergot if the uterus was not entirely emptied, but assure ourselves that everything had come away.

In missed abortion when expulsion had begun the treatment was the same as in other abortions. If, in the absence of expulsive efforts, such a case were diagnosed, and the patient did not suffer in any way, he advised waiting, but he would at once empty the uterus if discharge were present or the patient's health affected.

Dr. SLOAN confined his remarks to three points: (1) The greater frequency of retrodisplacements as a cause of abortion than was generally supposed; (2) the value of a reliable preparation of ergot in threatened abortion; and (3) the uselessness and danger of the curette in gross cases of septic incomplete abortion.

Dr. J. EDGAR said that in incomplete and inevitable abortion he dilated and emptied the uterus as far as possible with the finger. If required, he finally used a sharp flushing curette.

Dr. A. W. RUSSELL was sceptical as to the value of drugs in threatened abortion. He emphasized the value of asepsis, and advocated the use of the curette in both septic and aseptic cases.

Dr. NIGEL STARK held that the dangers of the curette were overrated, and that it was often required to insure the uterus being thoroughly emptied.

Dr. A. RANKIN approved of the use of the curette in septic incomplete abortion, and detailed the practice followed in the Glasgow Samaritan Hospital.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Obstetrics.

Meeting, Friday, April 18, 1902, Dr. W. J. Smyly, *President of the Section, in the Chair.*

Rotunda Hospital Report.—Dr. Macan opened the discussion on the Rotunda Hospital Report for 1901, and congratulated Dr. Purefoy on the satisfactory nature of the report. He found that of 286 abortions it was thought necessary to curette 200. This was a very large proportion—two out of three cases. Curetting was attended with danger in the puerperium; he had seen the principal assistant in the Munich clinic perforate the uterus at the very beginning of the operation. The application of the forceps in the extern maternity had the low proportion of 1 in 57·2 cases. Personal considerations entered largely into the question, but he could not understand why it was necessary to have such a high proportion as 1 in 24·5 for cases in the house, where the patient was throughout under observation, and the forceps could, if necessary, be applied at any moment considered advisable. In his own practice he now seldom applied the forceps, and he thought the less they were used the better. Icterus neonatorum was much more common than was generally supposed, fully 80 per cent. of children suffered from it, and, as a rule, they got well without any treatment at all. Withal, students should be told to be careful in their prognosis, for one of his cases had died of it. He looked on the bad cases as due to malformation, and for that reason alone they should not be too sure that every case would turn out well. To him there was no evidence of any connection between the case of aphasia reported and the puerperal state. Many cases of aphasia occurred, and they all got well; there was no necessary connection between the confinement and the recovery of the speech.

Dr. Jellett congratulated Dr. Purefoy on his interesting report. In the case of rupture of the uterus and vagina, he considered that the accident was due to the plugging, the tampon being allowed to remain after the uterine contractions had commenced. He considered that the tampon should be removed when the uterine pains were well begun. Quite recently a student of the Rotunda told him that the plug was allowed to remain in position until expelled with the child. The measurements as given in the table 'contracted pelvis' appeared to show that they got round pelves in the Rotunda, and he could not help thinking that the measurements must be wrongly taken. Menstruation appeared to him to be a misnomer for the red discharge that occurred in newly born female children. It was an isolated hæmorrhage, not a menstrual flow.

The President (Dr. W. J. Smyly) congratulated Dr. Purefoy on his excellent report, and the very low mortality of three out of 1,600 cases. He did not approve of curetting after abortions; it was not good practice. But a good deal depended on the kind of curette used—sharp, semi-sharp,

or dull. In all abortion cases where curetting was called for, he used the dull instrument. The uterus during the puerperium was abnormally soft, especially its mucous lining; if you curetted it thoroughly there was the risk of perforating the wall, and if you curetted imperfectly you left septic matter close to a raw surface, a nidus of infection. In no case should a sharp curette be used. He recommended postponing the operation for six weeks. At the end of that time the attendant risks were considerably lessened, and you then could recognise the firm muscle tissue under the instrument as you used it. Thirty-seven cases of accidental hæmorrhage seemed an extraordinary number for one year; they formerly looked on concealed hæmorrhage as almost fatal; here it seemed to signify little. He looked on the plug as dangerous if left in the vagina long after labour had commenced. But he could not agree that in the reported case the plug occasioned the tear. The injury might have been due to one of three things: (1) plugging the vagina; (2) pressure of the head on the cervix; (3) pulling up of the vagina.

Dr. Purefoy begged to thank the members of the Section for the reception they had given his report. Dr. Macan had waxed eloquent on the unwisdom of curetting, but he did not agree with him at all. He was of opinion that the sooner you curetted and removed all septic matter from the womb the better. Of the wisdom of this procedure he was quite satisfied. The dangers of the operation were known to all. As to the question, should it be necessary to curette two out of every three cases? He would answer: curetting was expedient, even if not necessary. He did not mention that he used a blunt curette, for he took it for granted that the members were too familiar with the fact that a sharp curette should not be used in a parturient womb. Pelvic measurements were carefully taken and accurately noted, but all who took such measurements must be conscious of the difficulties of the work. The transverse narrowing of the outlet was due to approximation of the tubera ischii; he regretted that the patient was allowed to leave before measurements were taken. The lateral and bilateral incisions in episiotomy were not at all equal to the mesial incision he practised and recommended; the single lateral incision did not give as much space, and the bilateral incurred the risk of gangrene. With regard to the success of their prophylactic treatment of ophthalmia neonatorum, they had only four cases out of more than 1,600 children. They used from 1 to 3 drops of a 2 per cent. solution of nitrate of silver.

REVIEWS OF RECENT BOOKS.

TWENTY PHOTOGRAPHIC CHARTS, illustrating for Instructive Purposes Gynæcological Operations, and especially the Conservative Colpo-cœliotomy, with Explanatory Text. By Professor A. Dührssen, Berlin; the Photographs taken from Operations upon the Living, by Dr. Eugene Zeile, San Francisco. Berlin: S. Karger, 1902.

The operation of anterior colpotomy, or, to give it its full title, 'anterior conservative colpo-cœliotomy,' is not much practised in this country, nor, we may add, is the technique of it very well known. In the plates and text before us we have an authoritative description of the procedure provided for us by its originator, Dr. Dührssen. He has published this account of his operation avowedly with the object of convincing both those who are ignorant of it and those who are opposed to it of its superiority over abdominal cœliotomy and over posterior colpotomy. We believe that the majority of British gynæcologists will first of all require to be convinced that the vaginal route is superior to the abdominal; once this point is gained, it remains to be shown that the anterior incision is generally preferable to the posterior.

Now, there is no doubt that the majority in question holds the view that abdominal cœliotomy is preferable to vaginal cœliotomy, except in a very few cases. The chief argument on behalf of the former is that the field of operation is undoubtedly better exposed; and complications such as adhesions to bowel and other surrounding structures, and hæmorrhage, can be more satisfactorily dealt with. It is, indeed, obvious that when these complications affect parts high up in the pelvis, or even in the abdomen, it would be impossible to reach them through the vagina. The arguments on behalf of the vaginal route are (1) that there is less shock, to which we may reply that the grave abdominal cases where much shock follows are precisely the cases unsuitable for vaginal operations; in less severe abdominal cases the difference in shock is quite inconsiderable. (2) That convalescence is quicker. In straightforward cases a patient could leave hospital in twelve days after vaginal section, as against seventeen days after abdominal section. This is counterbalanced by the cases in which a discharge continues for several weeks after vaginal operations. (3) That the risk of abdominal hernia is obviated. As a matter of fact, the proportion of cases of hernia when the abdomen is sutured according to modern methods, is very small, probably not more that 0.5 per cent.;

on the other hand, cases of hernia have occurred after vaginal operations. We don't, of course, pretend to be discussing exhaustively the relative merits of the two routes; we merely indicate some of the chief points that must be considered if an adherent of the abdominal route is to be converted to a preference for the vaginal. We do not say that the present work will not succeed in making some converts; but we do not think it likely, because the author certainly does not lay himself out for this purpose; and yet this preliminary step will probably be necessary before he can inspire enthusiasm for the discussion as to the relative advantages of anterior and posterior colpotomy.

Dr. Dührssen adopts a somewhat different line of argument, his contention being that he has given to anterior colpo-cœliotomy such a definite and typical technique that operations can be done through the vagina which would necessitate abdominal section if the choice lay between this and posterior colpo-cœliotomy. Whether he has proved this thesis we must leave to his readers to decide for themselves. We can at least highly commend the work as a reliable description of his methods which can be consulted by those who are interested in the subject. The plates contribute very largely to the clearness of the exposition. They are from photographs taken from actual cases, and they are ingeniously printed on transparent linen in such a way that they can be studied as they lie on the table, or they can be stretched between rollers and hung in front of a window. By the latter plan a demonstration can easily be given to a large class, so that for teaching purposes the idea is a good one.

All the plates are by no means equally good. Some are quite clear and easily understood. Others are blurred and indecisive, and even with the explanatory letterpress it is very difficult to recognise the different structures which are supposed to be represented.

The interest of the descriptions is materially enhanced by short accounts of actual cases operated upon by the different methods described. The author gives a few statistics which go to prove that the method has been very successful in its author's hands; in the first 500 cases of vaginal cœliotomy the mortality was 3 per cent.; in the second series of 428 cases it was reduced to 2 per cent. It is difficult, however, to form a correct estimate of the precise value to be attached to the mortality statistics, for the figures evidently include a large number of cases of simple vaginal fixation of the uterus, which is so evidently an operation of expediency that any mortality at all that was not merely accidental or incidental to any operation, however simple, would be sufficient to condemn the operation at once.

The letterpress is translated into English for the benefit of those who do not read German.

TRANSACTIONS OF THE ROYAL ACADEMY OF MEDICINE IN IRELAND. Vol. xix. Edited by John B. Story, M.B., F.R.C.S., General Secretary: Surgeon to St. Mark's Ophthalmic Hospital, Dublin. Dublin: Fannin and Co., Ltd., 1901.

Owing to the number of Metropolitan medical societies, it would be impossible to include their yearly reports under one cover, so the Briton must sigh in vain when he views the 'Transactions of the Royal Academy of Medicine in Ireland,' in the form of neat volumes with medical, surgical, obstetrical, and purely scientific work all conveniently blended. Attempts to unite the London societies have hitherto failed. Perchance something homologous to a 'trust' may effect what mutual consent has failed to bring about. As far as archives are concerned, amalgamation would be both economical and convenient.

As the proceedings of the Section of Obstetrics in this Academy are reported in our pages, it will not be necessary in future for us to review the transactions of that section at any length, but the work recorded in this nineteenth volume has not been noticed in our columns, so a few words will be said about certain subjects of interest in its pages.

Outside the section of obstetrics our readers might profitably glance at Dr. Ninian Falkiner's notes on 'Chloride of Calcium,' especially as to the hæmostatic properties of that salt. We know how firmly Mr. Mayo Robson, on long experience, believes in it as checking the tendency to hæmorrhage in jaundice. He gives it by the mouth before performing choledochotomy, and in enemata after the operation. Dr. Falkiner has administered it with success in hæmatemesis in gastric ulcer. He quotes Dr. Amand Routh's advocacy of chloride of calcium in uterine hæmorrhage, and probably ten years hence much more satisfactory experience of the chloride in gynæcology will be recorded in future monographs on its use. We must not forget, on the other hand, that Dr. Hale White considers that the chloride has not proved of much service as a hæmostatic. Dr. Francis Heuston's case of nephrectomy for sarcomatous tumour of the kidney, where the patient was a young woman, aged twenty-four, merits notice. Lastly, outside our special section, it is quite our duty to turn the attention of our readers to a communication under 'State Medicine' on 'The Mortality of Infants under One Year from Improper or Imperfect Feeding, with Suggestions for Public Instruction to Parents and Nurses on the Subject.' The author is Mr. George Cope, a Medical Officer of Health. A discussion on the subject is appended. There was some difference of opinion about Irish women as careful mothers: one speaker held that because they were prolific they rather neglected their infants; another insisted, that in Dublin, of all places, the women took most care of their children. The difficulty of supplying sterilized milk to the poor was admitted.

The first contribution to the section of obstetrics is Professor Kidd's 'Notes on a Case of Successful Application of the Forceps where Cæsarean Section had been previously performed.' The operation was found necessary on account of a fibroid in the posterior wall of the cervix,

which, in spite of repeated endeavours, could not be pushed above the brim of the pelvis. The patient neglected to report herself pregnant as advised, and was not heard of till nearly two years later, when she applied for relief, being not only pregnant, but actually in labour. The sutured uterus bore the strain of seventy-three hours' labour without detriment. The fibroid did not seem to offer so great an obstacle as it did when the Cæsarean section was performed, so after due deliberation Dr. Kidd applied the forceps and delivered the child, which was saved. It appeared that since the previous labour the tumour had flattened out posteriorly and had come to lie higher up. As Dr. Purefoy observed in the discussion on this case, which desires much consideration, it is impossible to form any prognosis as to what the behaviour of a fibroid detected in pregnancy might be. Dr. Kidd is careful to note that had the uterus been removed, or the patient otherwise sterilized, at the first labour, she would never have participated in the blessings of maternity. Let us, in conclusion, remember that a distinguished teacher, having once performed section, did not on that account hold it absolutely necessary to repeat that operation on the same patient, and that his complete success with the forceps justified his decision.

Professor Kinkead removed an epithelioma of the anterior lip of the cervix in the eighth month of pregnancy. The patient, a multipara, aged twenty-eight, was very ill through hæmorrhages, which had gone on for two months. A few weeks later she was delivered by the aid of forceps; there was little hæmorrhage during and after labour, but a mass as big as a duck's egg was detected in the vagina. About one month after labour Dr. Kinkead designedly excised the recurrent growth alone, and took steps to disinfect the vagina. After fifteen days had elapsed, he removed the uterus through the vagina. Some interesting complications occurred during convalescence; at the end of two months the patient was in good health. This case forms the subject of a separate article. A second, by the same author, includes reports of four cases of abdominal section. The third is remarkable, as three pelvic cysts were enucleated from the recto-vaginal septum, not without great difficulty; the case requires close study, and the precise nature of the new growths does not seem clear. The remaining cases are of much interest, being more or less incomplete or exploratory. They are akin to the cases of chronic serous perimetritis, on which Mr. Alban Doran wrote in the *Journal* last March, and in one case where there was tubercle the deposit was found to have disappeared when a second exploratory incision was made. We hope to report these cases in abstract. Dr. T. Henry Wilson contributes a short note on a tumour of the vulva in a single woman, aged thirty-two. It was of the size of a hen's egg, and when excised looked like a myoma. On microscopical examination it proved to be a spindle-celled sarcoma. The importance of referring all specimens of tumour to the pathologist was dwelt upon in the discussion on this paper. No doubt all of us know that this ought to be done, but a small tumour on any external part is still, we fear, treated frivolously after removal if it looks innocent. Innocence is more often taken for malignancy in an

internal tumour. Dr. Henry Wilson deserves thanks for his paper; his action is an example to be followed, not only after the triumphant extirpation of an abdominal tumour, but also after the excision of any external growth which seems in the slightest degree doubtful. The stern pathologist would not even admit that any growth can be otherwise than doubtful before examination. In Dr. Wilson's case there were indications of recurrence within a year. All of us will consider with interest and respect Dr. W. J. Smyly's important contribution on 'Hysterectomy by Doyen's Methods.' Abdominal panhysterectomy meets with his approval. It seems likely, though not certain, to become established in the United Kingdom, and if its establishment and the necessary arguments and statistics associated therewith prevail, Dr. Smyly will be allowed to say unhesitatingly, *Quorum pars magna fui.* The Clinical Report of the Rotunda Lying-in Hospital for 1899-1900 has been prepared by the Master, Dr. Purefoy, and the Assistants, H. C. Lloyd and R. C. Carton. We hope to notice matters of interest in this report in a future issue.

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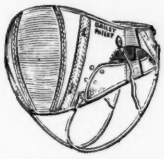

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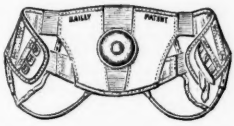
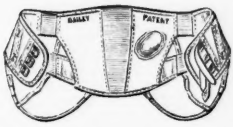


No. 4.—Umbilical Hernia.



No. 5a.—Floating Kidney.

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To face first page of text.

THE OBSTETRICIANS AND GYNÆCOLOGISTS OF THE EMPIRE.

THE arrangements have now been completed for the Reunion on June 24.

A Reception will be held at 20, Hanover Square, in the Rooms of the Royal Medical and Chirurgical Society, at 4 p.m., by Sir John Williams, Bart., M.D., Dr. Peter Horrocks (President of the Obstetrical Society of London), and Dr. Halliday Croom (President of the British Gynæcological Society).

To this Reception all medical practitioners interested in obstetrics and gynæcology are cordially invited, and it is hoped that the occasion will be the means of bringing together not only the Obstetricians and Gynæcologists of London, but also many from other parts of Great Britain and Ireland and from the Colonies and abroad, who may be in London at that time. In making the Reception known to such visitors the co-operation of all medical practitioners interested will be welcomed.

The Dinner will take place in the Whitehall Rooms, Hotel Metropole, under the Chairmanship of Sir John Williams, at 7 for 7.30 p.m. The list of Stewards for this Dinner has already been published, but all medical practitioners interested in obstetrics and gynæcology will be welcomed.

Applications for Dinner tickets (price £1 1s.) should be made at once to Dr. Eden, 26, Queen Anne Street, W.

IMPROVED OBSTETRIC REQUIREMENTS.

RISK OF PUERPERAL SEPTICÆMIA . . .

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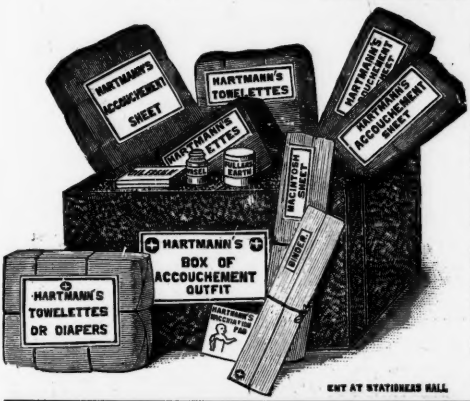

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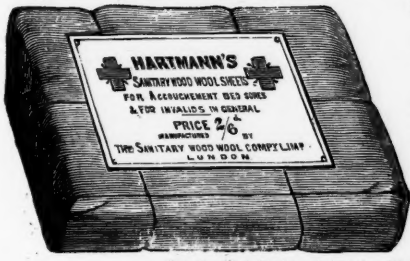

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Extract from the "LANCET," November 2nd, 1901.

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